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ABSTRACT

This publication of the California Association of School Psychologists reflects a broad array of topics for those who serve a diverse group of students with a range of needs. The articles in this volume address several current topics, including cognitive assessment with bilingual students; cultural considerations when working with parents; strategies to enhance critical thinking skills; home/school collaborative behavioral interventions; preparing a school district's crisis intervention policy; and research from the field of developmental psychopathology on eating disorders. The titles include: "The California School Psychologist in the 21st Century" (Shane R. Jimerson; Marilyn Wilson); "Using the WPPSI-R with Bilingual Children: Implications for Practice" (Mary diSibio; Thomas Whalen); "Micronesian Cultural Influences on Parent Attitudes Concerning Their Young Child with a Disability: Considerations for Fostering Cross-Cultural Parent/Professional Relationships" (Kathleen Sadao); "Developing Scientific Minds: The Use of Mediated Thinking and Learning To Facilitate Enhanced Student Outcomes" (Carol Robinson-Zanartu; Lois Campbell); "Making it Work at School and Home: A Need Based Collaborative, across Settings, Behavioral Intervention" (Leasha Barry; Grace E. Santarelli); "Development of a School District Crisis Intervention Policy" (Stephen A. Brock); and "The School Psychologist's Primer on Anorexia Nervosa: A Review of Research Regarding Epidemiology, Etiology, Assessment, and Treatment" (Shane R. Jimerson; Renee Pavelski). (JDM)

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The California School Psychologist in the 21st Century

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As we enter the new millennium, this volume of *The California School Psychologist* reflects a broad array of topics related to the work of school psychologists in California. School psychologists in California provide services to a remarkably diverse group of students with a range of needs, living within a variety of contexts. The demands on the profession require school psychologists to be knowledgeable in many areas. Articles in this volume provide information addressing several current topics, including cognitive assessment with bilingual students, cultural considerations when working with parents, strategies to enhance critical thinking skills of all students, home/school collaborative behavioral interventions, preparing a school district crisis intervention policy, and research from the field of developmental psychopathology to facilitate understanding students with eating disorders. For each topic, articles provide a review of where we have been (what we know), describe where we are (our current situation), and offer ideas for where we may go (implications and recommendations). The following highlights from each article offer an orientation to the topics addressed in this volume.

The first article examines the underlying factor structure of the Wechsler Preschool and Primary Scale of Intelligence - Revised (WPPSI-R) considering bilingual and monolingual students. The authors used a series of maximum likelihood confirmatory factor analyses, which is a statistical method sometimes referred to as structural equation modeling (SEM). Analyses yielded highly similar factor structures in the two groups. However, the general factor accounted for a significantly higher proportion of variance for the monolingual children. These results indicate that the constructs measured by the WPPSI-R may not be the same for bilingual and monolingual children. The authors discuss the implications for practice, including: the use of cognitive assessment Verbal scores for bilingual children; that Verbal scores do not represent the "true" cognitive ability of bilingual students, but may provide other important information, and the Performance scores yield the only valid index of cognitive ability for bilingual children. Given the large number of bilingual students in California, results of this study are especially germane and significant.

The focus of the second article is how professionals from predominantly traditional Anglo-American cultural backgrounds can transcend their own culture specific attitudes and training when working with students and families from other cultures. The author presents an overview of Micronesian cultural influences on parent attitudes regarding having a child with a disability and contrasts these values with Anglo-American mainstream values. Next, the implications for educational professionals working with these students and families are discussed. These include suggestions for fostering cultural mutuality: become familiar with a given culture's customs and norms; assess the perceptions of the child, family, and community regarding disabilities; and explore your own value system and beliefs regarding disabilities to understand how this influences your judgments and perceptions. Overall, cultural awareness and sensitivity are invaluable in establishing parent/professional partnerships to enhance the education of incredibly diverse families in California.

The third article emphasizes the importance of effective educational interventions at the systems level. The focus is on enhancing the critical thinking skills of all students. This study examines the achievement of third-grade students with a standard science curriculum relative to students who received a mediated thinking and learning (MTL) infused science curriculum. The analyses consider the socioeconomic status (SES) and whether the students were monolingual or emerging English speakers. The results indicate that students experiencing the MTL curriculum demonstrate higher achievement than their peers (controlling for language proficiency and SES). Moreover, the low SES, emerging English speakers performed as well or better than higher SES, monolingual English speakers who received the standard curriculum. This study provides an example of a systems level intervention that may facilitate the education of all students. In addition, this project represents a wonderful example of a university-school partnership to implement and evaluate an intervention strategy.

The fourth article addresses the issue of educational professionals collaborating with each other and the student's family to optimize the effects of behavioral interventions. The basic idea is that students receiving behavioral support services will benefit from programs that offer consistency across settings (e.g., home and school). This article presents a case study of a ten-year-old child diagnosed with mild mental retardation and presenting behavioral problems. A school psychologist and behavioral analyst establish a collaborative including the parents and classroom teacher in an effort to offer consistency across the settings. This study gathered data to: establish a baseline, provide ongoing monitoring, and for follow-up analysis of the student's behaviors at school and home. In addition to the parent and teacher positive satisfaction with the collaborative, the data demonstrate effectiveness through three months post-intervention. The authors identify complexities in developing and implementing home/school collaboratives and offer ideas to overcome obstacles. During an era of increasing demands on school psychologists, such collaborative efforts warrant further consideration and investigation.

The fifth article provides a qualitative description of efforts to initiate, implement, and continue a school district crisis intervention policy. As a participant observer, the author describes the school environment, barriers to change, specific steps in the process, and discusses actions and factors related to overcoming these possible barriers. In addition, resources are included to assist others in the process of developing a school district crisis intervention policy. Involving key administrators and support staff throughout the initiation and implementation emerged as an important lesson from this school change effort. Rather than waiting for another tragedy to provide an impetus for a crisis intervention policy, the author advocates ongoing crisis intervention training and developing a policy before an incident occurs. Considering the national attention given to the topic of youth violence and school shootings during the past few years, crisis preparedness is clearly an area of current emphasis for educational professionals.

The final article offers important information from the field of developmental psychopathology regarding youth with eating disorders. The authors provide a succinct review of recent research regarding the epidemiology, etiology, assessment, and treatment of anorexia nervosa. In addition, with an emphasis on benefiting from available technology, the authors also identify valuable world wide web sites that contain relevant information and provide a concise summary of each site. This article highlights the multidimensional character of anorexia nervosa with an emphasis on a developmental perspective considering, sociocultural, biogenetic, personality, family, emotional, and behavioral domains. The authors provide research essential for preparing school psychologists to be the most effective advocates and collaborators for students and families facing the challenges of anorexia. Given the increasing prevalence and extended age range of

eating disorders, and our understanding that socioemotional and mental health factors influence student academic performance, eating disorders can no longer be overlooked in our schools.

Considering the breadth of knowledge necessary to meet the many challenges school psychologists face daily, this volume of *The California School Psychologist* provides a wealth of information on several current topics. *The California School Psychologist* is a useful resource for scientists, practitioners, and scholars. Throughout the 21st century *The California School Psychologist* will serve to disseminate research and knowledge addressing important issues in the field, function as a catalyst for advancing practice and science related to these issues, and provide a repository that reflects the issues and advances especially salient to School Psychologists in California.

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Using the WPPSI-R with Bilingual Children: Implications for Practice

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The purpose of this study was to compare the underlying factor structure of the WPPSI-R for young, nonreferred children across two language groups, bilingual and monolingual. Subjects for the study were children identified according to language background from the WPPSI-R standardization group. A series of LISREL maximum likelihood confirmatory analyses was performed. A best-fitting model was determined for the entire standardization sample ($N = 1700$) and then tested for invariance across the two language groups. The same model was tested across two smaller language subgroups, matched on the variable of socioeconomic status. Results revealed highly similar factor structures in the two groups, but the proportion of variance accounted for by a general factor was significantly higher for the monolingual children (49.20%) than for the bilingual children (19.85%). These findings indicate that the WPPSI-R is not measuring the same verbal or general factor constructs in bilingual children as in monolinguals. Results also lend support to the recommended practice of reporting Performance scores as the only valid index of cognitive ability for bilingual children.

The number of children who enter U.S. schools each year with limited English proficiency[1] (LEP) is estimated at close to three million and growing. Precise figures remain uncertain, as only those states receiving federal Title VII funds are required to report such information. However, a steady upward trend is evident, especially in those states with the largest populations of LEP students, California (1,381,393), Texas (513,634), and New York (247,087). According to current figures, 2.2 million students in California, more than one out of three, is not a native speaker of English (California State Department of Education, 2000). The reported number of LEP students in the United States continues to increase. In a 1996-97 survey, 31 of the states and territories reported increases in LEP student enrollments of 10% to 25% over previous years (National Clearinghouse for Bilingual Education, 1998).

As more and more young LEP and bilingual children enter public schools, the need for better informed bilingual assessment practices and early intervention becomes increasingly acute. Historically, the overrepresentation of bilingual children in special education classes has called into question the use of traditional assessment practices in schools, especially the use of standardized tests (Brady, Manni, & Winikur, 1983; Heller, Holtzman, & Messick, 1982; Mercer, 1973; Ortiz & Maldonado-Colon, 1986; Tucker, 1980). Rising concern about such disproportionate representation precipitated the enactment in 1970 of federal mandates to ensure "nondiscriminatory" assessment in schools (*Diana v. State Board of Education*, 1970; PL 94-142, 1975).

However, a trend in the opposite direction is indicated by more recently published information based on surveys by the Office of Civil Rights. This trend suggests that bilingual children are now *underrepresented* in some categories of special need, especially speech and language impairment, behavior disorders, and mild mental retardation

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(Chin & Hughes, 1987; Hunt, 1994). Clearly, the dangers of misdiagnosis and misplacement are of serious concern regardless of the direction of the error (Bergin, 1980; Figueroa, 1990a; Laosa, 1977; Plata & Santos, 1981).

The theoretical and empirical questions associated with bilingual assessment are complex, and more than seventy years of study have yielded no easy answers. Several robust findings have emerged, however, suggesting a framework for current practice and directions for future research. These findings, reviewed below, are discussed more extensively elsewhere (e.g., Figueroa, 1990a; Kaufman, 1979, 1994; Sattler, 1992).

Much of what has been written about bilingual assessment has aimed to debunk the faulty assumptions that have historically surrounded this area of psychoeducational practice, many of which remain remarkably entrenched even now.

False Assumptions

Early in the 1900s, during an unprecedented influx of children from eastern and southern Europe into American schools, it was widely assumed that standardized ability tests normed on English-speaking children could be used equally well to assess the cognitive ability of children who spoke little or no English. On the basis of such beliefs, non-English-speaking children were routinely judged to have low intellectual ability (Figueroa, 1990a; Mercer, 1973; Martinez, 1985). Even now, some 70 years later, the level of misunderstanding surrounding bilingual assessment remains deplorably high, despite growing awareness of the importance of language and culture in understanding children's development. Especially persistent is the notion that standardized ability tests can somehow circumvent language and cultural experience to tap directly into a child's "innate" intelligence.

Another common assumption is that children's ability can be accurately assessed in English as soon as their English-speaking skills allow basic interpersonal communication. In one large study of bilingual children (Cummins, 1984), teachers consistently underestimated the effects of a second language on test scores and assumed that standardized ability testing could establish a child's "real learning ability," as distinct from other, presumably less permanent, problems in acquiring English as a second language (Cummins, 1984, p. 23).

Other misconceptions include the commonly held notions that standardized tests can simply be *translated* into the child's primary language, or that a bilingual child's scores are best compared with scores of *monolingual* children from the same primary language background. Any number of writers have pointed out the theoretical and practical hazards of such popular misconceptions, which, when left unexamined, result in assessment approaches that are fundamentally flawed (AERA, APA, & ACME, 1985; Clarizio, 1982; Figueroa, 1989, 1990a, 1990b; Kaufman, 1994; Sattler, 1992). One leading researcher has appropriately labeled such approaches as psychoeducational "malpractice" (Figueroa, 1990a).

Factor-Analytic Comparisons

Factor-analytic studies using standardized ability scales have consistently found that the same factors emerge for bilingual as for monolingual groups (Cummins, 1984; Dean, 1980; Oakland & Feigenbaum, 1979; Reschly, 1978; Reynolds & Gutkin, 1980).

Although monolingual English-speaking children score higher than bilingual subjects on standardized ability scales, the disadvantage of bilingual children is most striking in the *verbal* portions of the tests, with bilingual children scoring an average of 10 to 20 scale score points lower than their monolingual age-mates on verbal ability scales (Kaufman, 1994). On *nonverbal* measures, bilingual groups typically score equal to, or within a few points of, the monolingual mean (Dean, 1980; Cummins, 1984; Gerken, 1978; Mercer, 1979; Oakland, 1980; Reschly, 1978; Swanson & Deblassie, 1979; Swerdlik, 1978). Even when the two language groups are equated for socioeconomic status, mean differences are substan-

tially greater for verbal than for nonverbal ability measures (Jensen, 1980). So robust is this phenomenon that it has been dubbed the "ubiquitous dichotomy" (Figueroa, 1990b, p. 674).

Studies of Psychometric Bias

The currently popular case *against* the use of standardized ability tests in bilingual assessment is not so unequivocal as may be commonly assumed. Indeed, a preponderance of the evidence currently available indicates that such tests generally measure the same constructs, with equal accuracy, regardless of language background.

Many studies have examined various indices of internal and external validity for evidence of possible test bias in the performance of bilingual children on standardized ability tests. Results of these studies show the tests to be no less reliable or internally consistent when used with bilingual children (Dean, 1977; Oakland & Feigenbaum, 1979). Nor does it appear that any particular pattern or cluster of items on any of the widely used ability scales emerges as particularly easy or particularly difficult for bilingual children, as would be expected if certain items carried special cultural significance for a particular language or cultural group (Figueroa, 1983; Jensen, 1974; Sandoval, 1979). Rather, the data show that bilingual children perform somewhat lower on all items, throughout the test, especially when the items are verbal in nature.

How useful are standardized ability scores in predicting future achievement for bilingual children? A number of studies have examined the predictive validity of ability scores among various groups of bilingual (usually Hispanic) children. With few exceptions (Mishra, 1983), these studies have found that such scores are equally accurate in their predictive power, regardless of whether they are predicting future achievement scores for a monolingual or for a bilingual child (Dean, 1979; Oakland, 1980; Reschly & Reschly, 1979). In one longitudinal study, WISC-R scores of Hispanic students showed reliable correlations with achievement scores even 10 years after initial testing (Figueroa & Sassenrath, 1989). Predictive validity coefficients are usually reported within the range of $r = .30–.70$, with full scale scores emerging as the best single predictor, regardless of language group, followed closely by the verbal scale score. Nonverbal scores serve as reliable, though less powerful, predictors of achievement scores for both monolingual and bilingual children (Clarizio, 1982; Figueroa & Sassenrath, 1989).

Early Assessment with Bilingual Children

Relatively few studies have focused specifically upon the assessment of young bilingual children. In an early, but often cited, study, Darcy (1946) examined the effects of bilingualism upon the measured intelligence of preschool children matched for socioeconomic status. Comparing scores on the Stanford-Binet Scale (Form L), and the Atkins Object-fitting Test (Form A), Darcy found the usual advantage in favor of monolingual English-speaking children on the highly verbal Stanford-Binet test, but reported an advantage in the opposite direction on the performance-based Object-fitting test. Darcy concluded that, although the two measures shared a broad degree of overlap, each test also measured functions not measured by the other; consequently, the bilingual children's "language handicap" proved detrimental on the Stanford-Binet Scale, but was "compensated for" by their superior performance on the Atkins Test (Darcy, 1946, p. 36).

McShane and Cook (1985) cite three studies of young Mexican-American children tested on the Wechsler Preschool and Primary Scale of Intelligence (Wechsler, 1967). In all three studies, the Mexican-American children scored lower than the Anglo children and demonstrated large Verbal-Performance disparities, scoring an average of approximately 20 points higher on Performance IQ than on Verbal IQ. In one of these studies (Gerken, 1978), a significant effect was reported for language dominance, such that the children classified as English-dominant scored highest (FS IQ = 107), the children classified as bilingual

(Spanish-English) scored next highest (FS IQ = 99.03), and the children classified as Spanish-dominant scored lowest among the three language groups (FS IQ = 80.30).

In general, it appears that the commonly observed disparity between verbal and nonverbal test performance is greatest in very young bilingual children and diminishes as they get older and are exposed to more years of schooling in English-dominant classrooms (Esquivel, 1985). The effects of language background upon the measurement of cognitive ability are long lasting, however, and perhaps never entirely eradicable. Standardized ability estimates continue to be influenced by language background even after proficiency in English has been achieved (Figueroa, 1983; Jensen, 1974).

The purpose of this study was to compare the performance of young, nonreferred bilingual and monolingual children on a well developed standardized test of ability, the WPPSI-R. The underlying factor structure of this test for a large, representative sample had already been explored, using data from the standardization sample as a whole (Gyurke, Stone, & Beyer, 1990; Wechsler, 1989). Although information about language background had been collected and was included as part of the individual data file for each child in the sample, no analysis of the language variable had been undertaken. The present study was designed to examine possible differences in test structure and interpretation across two language groups, bilingual and monolingual children.

Table 1
The WPPSI-R Subtests with Factor Loadings

Subtest	Verbal	Performance
Comprehension	.75	.19
Information	.74	.33
Vocabulary	.73	.21
Sentences	.65	.24
Similarities	.64	.30
Arithmetic	.57	.44
Block Design	.26	.70
Geometric Design	.20	.64
Object Assembly	.17	.61
Mazes	.19	.59
Picture Completion	.39	.53
Animal Pegs	.25	.41

$N = 1,700$

Note. From *WPPSI-R Manual* (p. 148), by D. Wechsler, 1989, San Antonio, TX: The Psychological Corporation. Copyright 1989, 1967, 1963 by The Psychological Corporation. Reprinted with permission.

METHOD

Instrument

The Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R) is an individually administered clinical test for assessing the intelligence of children aged 3 through 7 years, 3 months (Wechsler, 1989). The test includes twelve subtests that are divided into separate Performance and Verbal scales. This division is based empirically upon the findings of numerous intercorrelational and factor-analytic studies (e.g., Gyurke et al., 1990). Logically, the division is based upon the nature of the response required to earn credit on each subtest. A child's nonveral response (such as pointing or demonstrating) may earn full credit on Performance items; on Verbal items, however, the child must provide a spoken response in order to receive credit. Thus, while none of the WPPSI-R subtests can be considered nonverbal in the strictest sense (all require at least minimal examiner verbalization during administration), the Performance subtests are clearly less dependent upon language for successful performance.

Table 1 (from the *WIPPSI-R Manual;* Wechsler, 1989, p.148)[2] displays the subtests of the WPPSI-R, which together determine a Verbal, Performance, and Full Scale IQ for each child. Table 1 also shows the factor loadings of the subtests on the Verbal and Performance factors that emerged. These loadings were derived from a principal axis analysis with orthogonal rotation, using scores from the entire standardization sample.

Participants

The participant group for this study was the

WPPSI-R standardization sample. The standardization sample comprised 1,700 children spread evenly over the age range of 3 to 7 years, three months, and divided evenly between boys and girls. The sample was further stratified on the variables of ethnicity, geographic region, and parental socioeconomic background. Information on language background was also included in each child's data file, although the sample was not specifically stratified on this variable. As part of the screening process for the standardization group, parents were asked if the child spoke any language other than English. If a parent said yes, the parent was then asked if the child was proficient in English. Only those children judged by their parents to be English-proficient were included in the sample.

This study used the entire sample for some preliminary model-fitting analyses. A second group of analyses was performed on bilingual and monolingual subsets. These subgroups consisted of 134 bilingual children and 1,500 monolingual subjects (see Table 2). Information on language status was not available for 66 children in the standardization sample. A final set of statistical analyses was conducted on 118 matched pairs of bilingual and monolingual children. Based on available demographic data, children from the two language categories were matched on two socioeconomic variables— highest level of education and highest level of occupation attained by either parent. Each pair of subjects was exactly matched on 1 of 5 levels of education and 1 of 8 categories of occupation.

Table 2
Demographic Differences Between Language Groups

	Monolingual (n = 1,500)	Bilingual (n = 134)
Ethnic Differences		
Asian	0.7	9.0
Black	16.0	2.0
Hispanic (White)	5.5	66.4
Hispanic (Black)	0.3	3.0
Native American	0.9	1.5
White	75.9	13.4
Other	0.7	4.5
Occupational Differences		
Managerial	27.9	16.4
Technical	29.4	12.7
Service	11.2	13.4
Farming	1.7	5.2
Repair	9.1	15.7
Operator	9.5	20.1
Homemaker	7.9	14.2
Unemployed	3.3	2.2

Note. Tabled values are percentages.

Procedure

The LISREL VII computer program (Joreskog & Sorbom, 1989) was used to conduct maximum likelihood confirmatory factor analyses. Confirmatory factor analysis is one of a family of statistical methods known as structural equation modeling (SEM). A reader unfamiliar with SEM should not expect to understand all the procedural details mentioned below. However, the overall nature and intent of the investigation should be evident. [For a review of confirmatory factor analysis with LISREL, see Byrne (1989, 1994), Hayduk (1996), and Joreskog and Sorbom (1993)]. Based on previous research by Gyurke et al. (1990), a two-factor solution was used as the null model from which to test other possible best-fitting models. Analyses of the covariance structure of the data were conducted in three stages. In the first stage, a best-fitting model was computed for the entire standardization sample (N = 1,700). In the second stage, this model was tested simultaneously for invariance across the two language groups. In the third stage, the same model was tested for invariance across the smaller language groups matched for socioeconomic status (SES).

In multi-group confirmatory factor analysis, when testing for the invariance of covariance parameters across groups, Joreskog and Sorbom (1989) recommend a step-by-step procedure in which each new test assumes invariance in the

Table 3
Comparison of Mongolingual (n = 150) and Bilingual (n = 134) Groups on WPPSI-R Subtests

	Monolingual		Bilingual		
Subtest	*M*	*SD*	*M*	*SD*	*t*
Comprehension	10.29	2.88	7.76	3.18	9.66 **
Information	10.26	2.85	7.54	3.00	10.52 **
Vocabulary	10.25	2.86	7.68	3.10	9.89 **
Sentences	10.22	2.90	8.04	3.21	8.23 **
Similarities	10.28	2.90	7.74	2.84	9.74 **
Arithmetic	10.18	2.92	8.57	2.74	6.18 **
Block Design	10.04	2.97	9.77	3.09	1.01
Geometric Design	10.03	2.94	9.78	3.16	0.97
Object Assembly	10.07	3.00	10.07	3.00	0.01
Mazes	10.06	2.95	9.54	3.14	1.96
Picture Completion	10.14	2.96	9.11	3.09	3.85 **
Animal Pegs	10.07	2.99	9.69	2.52	1.43
Verbal IQ	101.56	14.41	86.91	14.23	11.29 **
Performance IQ	100.54	14.94	97.75	15.30	2.06 *
Full Scale IQ	101.18	14.79	91.00	13.51	7.69 **

* $p < .05$.
** $p < .001$.

previous one. Specifically, in comparing monolingual and bilingual subjects, once a two-factor model was tested and determined invariant, it was then necessary to determine, in order, the possible invariance of the factor patterns, the error variances, and finally, the factor covariance. Following this procedure, we were able to answer the following three questions: (a) Do the two language groups exhibit statistically similar factor patterns? (b) Is the measurement error in the subtests similar for both groups? and (c) Is the relationship between the verbal and performance factors the same in both groups?

RESULTS

Comparison of Language Groups

Table 3 shows a comparison of the language groups on the WPPSI-R subtests. Multivariate *t*-tests indicated that all Verbal subtests favored the language majority group by highly significant margins. Within the Performance Scale, however, only one subtest (Picture Completion) showed a significant difference between groups—in favor of the monolingual children. Notably, this is the only subtest within the WPPSI-R Performance Scale in which the examiner specifically requests a verbal response: "Tell me what's missing." Overall, bilingual children scored 14.65 points lower than monolingual children on Verbal IQ and 2.79 points lower on Performance IQ.

Given this high-contrast pattern of differences across the WPPSI-R subtests, can we be certain that the WPPSI-R is measuring the same constructs in bilingual children as in monolingual children? In part, the answer depends on the covariance structure analysis. If it can be shown that one or more of the covariance structures is different between groups, that difference would indicate that the test is operating differently for bilingual children.

Tests of Covariance Structure

Table 4 shows the results of model-fitting and the

testing of the invariance hypotheses. Model 0 in the table (Gyurke et al., 1990) was used as a "null" model from which to begin refinements to the fit of the model. A logical first attempt was to free the factor parameters for the Arithmetic and Picture Completion subtests. Based on the factor loadings shown in Table 1, it was evident that these two subtests had substantial loadings on both the verbal and performance factors.

When Model 1 with the freed parameters was tested statistically, it showed a much better fit to the data than the simple two-factor model; the χ^2 statistic was reduced from 356.53 to 235.88. The Goodness of Fit index, a related statistic, also showed an improved fit, increasing from .886 in the null model to .916 in Model 1. Other models were constructed and tested, but none of these performed as well as Model 1, the baseline model.

Models 2, 3, and 4 in Table 4 are stepwise adjustments to the base model in which, for Model 2, the factor patterns are constrained equal in the two groups. The delta χ^2 value of 14.94 for Model 2 indicates that the factor patterns are statistically equivalent across groups. Model 3 constrains both the factor patterns and error variances. The statistical test is again insignificant (delta $\chi^2 = 28.90$). Model 4 further constrains the factor covariance (i.e., the correlation between verbal and performance factors). The delta χ^2 of 55.85 indicates that this correlation is not the same in both groups. A further LISREL analysis showed a correlation between factors of $r = .68$ for language majority children, versus $r = .36$ for the bilingual sample, a highly significant difference.

Demographic Differences

Does this finding of a significant difference in factor correlations between monolingual and bilingual children mean that the WPPSI-R is inappropriate for use with language minority subjects? Perhaps, but it must first be shown that other possible sources of variation between the two language groups are not the source of the correlational difference between test factors. Table 2 reveals important demographic differences between the two groups. Whereas three fourths of language majority children are white, more than two thirds of language minority subjects are Hispanic. Occupational differences do not appear to be as great, but are still considerable. While 57% of monolingual subjects have parents in managerial and technical occupations, for example, only 29% of bilingual parents are in similar occupations. Another important socioeconomic variable is education. An analysis of parental education showed that in 44% of the bilingual families, compared with only 9% of the monolingual families, neither parent had completed high school.

Matched Group Comparisons

To what extent do these demographic differences possibly cause covariance structure differences between groups? This question can be answered only by controlling or eliminating between-group variance on education or occupation. A procedure was designed in which each bilingual subject was categorized in terms of an 8 by 5 matrix (8 occupational and 5 educational levels). Each cell in this

Table 4
Simultaneous Tests for the Invariance of IQ Structure Between Initial Language Groups

Competing Models	χ^2	*df*	$\Delta\chi^2$	*df*	*p*
0. Initial two-factor model (Gyurke et al., 1990)	356.53	106			
1. Baseline model: two factors with freed parameters	235.88	102			
2. Model 1 with invariant factor patterns	250.82	114	14.94	12	*ns*
3. Model 2 with invariant error variances	264.78	126	28.90	24	*ns*
4. Model 3 with invariant factor correlations	291.73	129	55.85	27	< .001

Table 5
Simultaneous Tests for the Invariance of IQ Structures Between Matched Language Groups

Competing Models	χ^2	*df*	$\Delta\chi^2$	*df*	*p*
1. Baseline model: two factors with freed parameters	160.15	102			
2. Model 1 with invariant factor patterns	173.90	114	13.75	12	*ns*
3. Model 2 with invariant error variances	189.38	126	29.23	24	*ns*
4. Model 3 with invariant factor correlations	205.32	129	45.17	27	< .025

40-cell matrix represented the highest educational or occupational level attained by either parent. For each bilingual child in a given cell, a monolingual child was randomly selected whose parents' education and occupation matched that of the bilingual child.

Because of large socioeconomic differences between groups, a perfect match could not be found for all 134 bilingual subjects; however, 118 such matches were achieved.

Once these matched samples were formed, the same series of invariance tests was again performed. Results are shown in Table 5. Despite the removal of socioeconomic background as a possible confounding variable, these results are very similar to the initial analysis. The invariance hypothesis for factor patterns and error variances could not be rejected, but the hypothesis for invariant factor correlations was rejected. A follow-up LISREL analysis for standardized solutions produced correlations of $r = .78$ for the language majority group and $r = .38$ for the bilingual sample, a somewhat greater difference than before.

An additional analysis of mean performance on WPPSI-R subtests was conducted for the matched groups. These data are shown in Table 6. Results serve to sharpen and clarify the differences in performance between the bilingual and monolingual children when matched for socioeconomic status (SES). In this analysis, all Verbal subtests favored the monolingual children, but none of the Performance tests showed differences between the two groups. The overall difference in Verbal IQ was 9.52 points, in favor of the monolingual group; the Performance IQ difference was 0.95 points higher for the bilingual group, though this difference is not statistically significant.

General Factor Comparisons

Previous research on the WPPSI-R (Gyurke et al., 1990; Roid & Gyurke, 1991; Wechsler, 1989) has reported evidence for a large general factor in the WPPSI-R battery of subtests, accounting for 40.2% of the overall variance in scores. This finding is similar to earlier reports on the factor structure of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI; Wechsler, 1967), in which 39% of score variance was attributed to a general factor across all subtests (Carlson & Reynolds, 1981; Wallbrown, Blaha, & Wherry, 1973). Gyurke et al. (1990) also report a strong correlation ($r = .71$) between verbal and performance factors for the standardization sample as a whole. In light of these findings, it was of interest to know the extent to which a general ability factor is present in the WPPSI-R results of bilingual children, and whether the proportion of variance accounted for by this general factor is the same as, or different from, that accounted for in monolingual children. Does the proportion of variance attributable to a general factor vary significantly between language groups?

To answer this question, a hierarchical model was created and fit to the data for each language group separately, using a procedure described by Joreskog and Sorbom (1989). The LISREL solution for the matched-group data showed that for the monolingual children, 49.20% of the variance

in scores was explained, or accounted for, by a general ability factor. However, only 19.85% of the variance in bilingual scores could be explained by this general ability factor.

DISCUSSION

In many respects, results of the present study confirm earlier findings on bilingual assessment with standardized ability tests. The same underlying factor structure was confirmed across both language groups, with monolingual children outperforming bilingual children on all three scales of ability (Full Scale IQ, Verbal IQ, Performance IQ). The typical, even "ubiquitous," finding of higher Performance scores than Verbal scores among bilingual children also emerged clearly, though this disparity became less salient after controlling for SES. Even after matching, Verbal scores continued to favor the monolinguals. However, the slight initial advantage of monolingual children on the Performance Scale disappeared altogether in the subset of children matched for SES.

Other results extend existing knowledge regarding the use of the WPPSI-R with bilingual children. Data from the entire WPPSI-R standardization sample indicated a moderate fit of the data to a one-factor model, as well as sufficient correlation between the verbal and performance factors in a two-factor model ($r = .71$) to justify the use of the Full Scale IQ as a measure of general cognitive ability (Gyurke et al., 1990). Results also corroborate a broad overlap between Verbal and Performance scores for monolingual children ($r = .78$). However, the overlap for bilingual children was far smaller ($r = .38$ in the matched sample), as was the proportion of variance accounted for by a general factor (19.85% for bilinguals, compared with 49.20% for monolinguals).

A likely explanation for these results is that, for bilingual children, the verbal sections of standardized ability tests represent, at least in part, a measure of English language facility, rather than verbal intelligence per se (Jensen, 1974; Naglieri, 1982). The fact that matched samples of bilingual and monolingual children performed equally well on the Performance portion of the WPPSI-R lends indirect support to this hypothesis, as it is highly unlikely that two groups of children found to be equal on the construct of nonverbal intelligence would differ by nearly two thirds of a standard deviation (9.52 IQ points) on the construct of verbal intelligence.

Implications for Practice

Several important implications for applied practice emerge from these findings. In general, results in the present study lend indirect support the common sense notion forwarded by many writers that efforts to assess the "true" cognitive ability of a bilingual child with tools currently available will always fall short, because an ability test in English is always, to some extent, a test of English language facility (e.g., AERA, APA & ACME, 1985; Naglieri, 1982). Thus, it is reasonable to assume that scores from such testing will always, to some extent, underestimate actual ability (Figueroa, 1990a).

Further, these results highlight the need for special caution in using terms such as "IQ" and "intelligence" in interpreting ability scores for bilingual children. Despite its general consistency of factor structures across language groups, the WPPSI-R is *not* measuring the same verbal or general factors in bilingual children as in monolinguals. Consequently, these scores cannot be interpreted as valid indicators of either verbal intelligence or general intellectual ability in bilingual children. Indeed, based on present findings, the Performance IQ stands alone, as the *only* WPPSI-R scale score to provide adequate construct validity for use as an index of intellectual ability in these children. This conclusion corroborates earlier recommendations by some experts (e.g., Esquivel, 1985; Kaufman, 1979, 1994; Sattler, 1992) that practitioners should report only nonverbal or performance-based scores in the assessment of cognitive ability for bilingual individuals.

Another clear implication from this study is that the Verbal IQ score (and concomitantly the

Full Scale IQ score) cannot be reported in the same way as would be appropriate for monolingual children. The fact that these scores are *invalid* as measures of intelligence for a bilingual child would need to be clearly documented on the test protocol as well as in the assessment report, and special care would be required to ensure accurate interpretation and communication of results.

A number of questions remain, however, as to how, if at all, we are to use verbal scores in assessment/intervention planning for bilingual children. Unfortunately, very little empirical evidence is available to guide us. What we do know, based on existing research, is that verbal scores carry long-term implications for future academic success in English-dominant classrooms (Dean, 1979; Figueroa & Sassenrath, 1989; Oakland, 1980; Reschly & Reschly, 1979). Indeed, as noted earlier, verbal scores are more powerful than nonverbal scores in predicting future academic achievement scores for bilingual children (Clarizio, 1982; Figueroa & Sassenrath, 1989). Such findings argue against a hard-and-fast rule of excluding verbal score information from bilingual assessments.

Other compelling arguments against a total ban on verbal scores are highlighted by those children of bilingual background who actually perform *better* on the verbal subtests than on performance-based subtests, or bilingual children whose verbal scores fall *above* the national average, perhaps even in the superior range. Does it make sense to ignore verbal scores for these children? What is especially tempting, of course, is to conclude that any bilingual child who excels on the verbal section of a nationally normed test *must* be sufficiently proficient in English as to be evaluated in the same way as a monolingual child on the same

Table 6
Comparison of Monolingual (n = 118) and Bilingual (n = 118) Groups on WPPSI-R Subtests (Groups Matched on SES)

	Monolingual		Bilingual		
Subtest	*M*	*SD*	*M*	*SD*	*t*
Comprehension	9.87	3.23	8.08	3.20	4.27***
Information	9.41	3.00	7.81	3.05	4.09***
Vocabulary	9.69	2.91	7.97	3.08	4.38***
Sentences	9.54	2.83	8.42	3.11	2.91**
Similarities	9.55	2.85	7.92	2.84	4.42***
Arithmetic	9.66	2.90	8.69	2.75	2.63**
Block Design	9.58	3.37	9.71	3.18	0.30
Geometric Design	9.81	2.80	9.86	3.17	0.13
Object Assembly	9.37	3.58	10.19	3.08	1.87
Mazes	9.59	2.92	9.55	3.14	0.11
Picture Completion	9.43	2.97	9.25	3.15	0.47
Animal Pegs	9.54	2.98	9.64	2.57	0.28
Verbal IQ	97.82	15.26	88.30	14.19	4.97***
Performance IQ	97.25	16.39	98.20	15.73	0.46
Full Scale IQ	97.31	16.37	92.04	13.77	2.68**

** $p < .01$.
*** $p < .001$.

test.

This conclusion would not be justified, however. All of the bilingual children in the present study were identified as proficient in English, and some earned verbal scores well above the national average. Nevertheless, these children performed quite differently from their monolingual age-mates on verbally-loaded tasks. In this respect, the results of this study support the findings of earlier investigators, who concluded that a bilingual background alone is sufficient to invalidate verbal scores as a measure of intelligence, even when a child is deemed proficient in English, and (in a finding that goes beyond present data) even when the child's dominant language is identified as English (Figueroa, 1983; Jensen, 1974).

What then, would constitute an appropriate use of standardized verbal scores in the assessment of a bilingual child? How might these scores contribute to the much broader process of information gathering (including review of developmental history and school progress, observations, interviews, consultation, adaptive behavior ratings and other testing results, standardized and alternative) that would go into the overall assessment/intervention plan for a bilingual child?

On a practical level, there is much to recommend the use of verbal score information, provided such scores are considered *only* in context of their meaning for a bilingual child. The fact that these scores cannot measure "true" cognitive ability in a bilingual child and that they provide, at best, an underestimation of such ability would need to be clearly documented and communicated in every case. However, once appropriately "defused," verbal scores could be expected to provide valuable information about a child's current facility for *using English* to reason and solve problems. In addition, such information would be useful for identifying areas of relative learning strength or weakness in a child's English-dominant classroom performance.

Implications for Future Research

Despite the growing number of bilingual children in need of appropriate psychoeducational assessment, there has been surprisingly little progress in addressing the issues inherent in such assessment. There is an urgent need for more and better research in this area.

Like many previous studies, the present study was limited by the paucity of language information available. Although children from the standardization sample had been carefully selected to reflect a demographic cross-section of the United States, the only linguistic information collected came from one question on a parent interview. Additional questions regarding language dominance or the child's *level* of proficiency in English were not addressed. In the future, it is hoped that such large sample data collection efforts will initiate procedures to ensure the inclusion of more complete, and more finely calibrated, linguistic information.

A key finding in this study was that the WPPSI-R was not measuring the same verbal or general factor constructs in bilingual children as in monolinguals. Further research is needed to corroborate this finding and to explore the possibility of similar discrepancies in construct validity across various age groups and various measures of ability.

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Footnotes

[1]The terms *bilingual, limited-English-proficiency (LEP), English as a-second-language* (ESL), and *language-minority* are used throughout the professional literature to refer to individuals with a wide variety of speech, comprehension, and literacy levels. Unfortunately, a more precise terminology is seldom possible in describing current research, as the degree of proficiency in either language is not well controlled in most studies. In this article, the term *bilingual* is used most often, and is operationalized as clearly as possible in describing the subject population for the present study.

[2]From *WPPSI-R Manual* (p. 148), by D. Wechsler, 1989, San Antonio, TX: The Psychological Corporation. Copyright 1989, 1967, 1963 by The Psychological Corporation. Reprinted with permission.

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Micronesian Cultural Influences on Parent Attitudes Concerning their Young Child with a Disability: Considerations for Fostering Cross-cultural Parent/Professional Relationships

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Research during the last 10 years has shown progress in identifying effective methods for involving parents as an integral part of the multi-disciplinary team and increasing the cultural competence of professionals from special education and related service fields in the United States. However, there continues to be a great need for addressing how professionals from predominantly Anglo-American traditional cultural backgrounds can move beyond their culture specific attitudes and discipline focused training regimens to accept a more diverse and expanded world view of families from cultures unlike their own. In areas such as California, the rapidly changing demographics indicate that more ethnically diverse families will be entering the special education system of care as the new millennium unfolds. Evaluation team members including psychologists, special educators, teachers, and other professionals face the challenge of understanding local customs, attitudes, and belief systems concerning young children with disabilities. By reflecting on the author's experiences as a consultant for early childhood programs in the Western Pacific Basin at the time PL 99-457 was being implemented, the following paper describes a comparative model of the collectivist cultures of Micronesia and the individualist values of the United States. Parent attitudes concerning their young children with disabilities are examined and suggestions for promoting mutuality among parent/professional teams are offered.

Over 25 years ago, the United States embarked upon the development of educational services for children with disabilities through the passing of Public Law 94-142, the Education of the Handicapped Act of 1975 (EHA), currently known as the Individuals with Disabilities Act of 1997 (IDEA). The law mandated a free and appropriate public education within the least restrictive environment to school age children identified as disabled. Created over a decade ago, PL 99-457, the 1986 amendments to EHA, focusing on provision of services to very young children with disabilities and their families, has influenced professional's views concerning treatment options for this population.

A major discretionary section of the law, Part H-Handicapped Infants and Toddlers, called for the development of a statewide comprehensive service delivery system of early intervention, including the establishment of cross-agency linkages to ameliorate gaps in service provisions for young children with special needs and their families (Baldwin, Jeffreys, & Jones, 1995; Dunst, 1988, Trohanis, 1989). As remarked by Harbin (1996), "Part H of the Individuals with Disabilities Education Act (IDEA) has often been described as revolutionary legislation" (p. 68). Indeed, the law challenged prior child-focused therapeutic efforts and encouraged professionals to consider not only family involvement, but fam-

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ily-focused services which identify family strengths and needs as integral components to the child's individualized family service plan (IFSP), a written document containing family goals, required by the law (Bailey, 1987; Dunst, 1988; Gallagher & Desimone, 1995; Scheifer & Klein, 1989).

The result of this landmark piece of legislation has been a paradigm shift from professional driven decision-making to that of a more collaborative, team approach to identifying services for infants and toddlers with disabilities, with an emphasis on recognizing and strengthening the parent's role in their child's educational plan (Sadao, 2000). Recently, the law was amended and the title of Part H changed to Part C of IDEA 1997 (NICCHY, 1998; Turnbull & Turnbull, 1997). States are required "to develop a comprehensive, coordinated, multi-disciplinary, interagency system that provides early intervention services for infants and toddlers with disabilities and their families" (Individuals with Disabilities Education Act Amendments, 1997). In addition to continuing an emphasis on improving services through coordination of care, the law specifies that individual states and service providers improve their ability to effectively meet the needs of historically underrepresented populations (Individuals with Disabilities Education Act Amendments, 1997).

Additionally, the 1997 amendments now require that the parent must be part of the team (Turnbull, Turnbull, Shank, & Yeal, 1999). Research during the last 10-year period has shown progress in identifying effective methods for including parents as an integral part of the IFSP team and increasing the cultural competence of professionals from special education and related services fields (Kalyanpur & Harry, 1999; Lynch & Hanson, 1998). However, there continues to be a great need for addressing how professionals from predominantly Anglo-American traditional cultural backgrounds can move beyond their culture-specific attitudes and discipline focused training regimens to accept a more diverse and expanded world view of families from other cultures unlike their own. By reflecting on the author's experiences as a consultant for early childhood programs in the Pacific at the time PL 99-457 was being implemented, the following paper describes a comparative model of a collectivist culture of Micronesia and the individualist values of the U.S.

As evident from the requirements of Part C-Infants and Toddlers with Disabilities, the intent of the law is clear; services to children equate with identifying the needs of the family unit. Serpell (1988) points to the consideration of rethinking the types of services offered to young children with disabilities. "...it may be as important to assess the impact of prescribed activities on the designated 'agent' within the family as their impact on the client. The potential of the home environment for supporting a child's development is a function not only of the child's needs but also of the individual needs of the parents and of the siblings. The goals of services in a family setting must therefore not only be focused on the individual, but also on "helping the care unit to cope" (p. 265). Expanding the service to include home and community settings parallels the purpose of the original Part H and is reflected in IDEA 1997 as well, where natural environments are encouraged.

However, implementing this law in cultures outside the mainstream U.S. system is problematic, both within the geographic limits of the continental U.S. and beyond including the Pacific Island Nations of Micronesia, a collection of five U.S. affiliated jurisdictions located across the Western Pacific Basin. Program development in Micronesia, is a microcosm of what has transpired in the rural areas of the continental U.S. Historically, Micronesia has experienced special education replication of the U.S. model in communities without exploration of (a) the role of the child with a disability in the family and community and (b) the cultural influences that may mitigate parent availability and willingness to establish parent/professional partnerships in planning early intervention strategies. As emphasized by Serpell (1988), "Policies for the development of services for disabled children should be explicitly articu-

lated in relation to prevailing cultural norms and not transplanted indiscriminately from one society to another. Such policies should include guidelines on the ways in which skilled personnel and technological artifacts imported from abroad are to be utilized in the local context" (p. 273).

The changing demographics in the U.S. indicate that more families with diverse backgrounds will be entering the special education system of care in the new millennium. Multi-disciplinary team members including psychologists, special educators, teachers, and other professionals face the challenge of understanding local customs, attitudes, and belief systems concerning young children with disabilities. The family-focused, interagency approach to service provision is an appropriate strategy for serving young children with disabilities and their families from diverse ethnic and racial communities, if culture specific information is gathered and applied to the IFSP process. The values typology and checklist for professionals presented here, demonstrate the potential conflicts that may arise in instigating parent/professional liaisons when the professionals and parents are from differing cultural backgrounds. Parent attitudes concerning their young children with disabilities in the U.S. and Micronesia is examined and suggestions for promoting mutuality among parent/professional teams are offered. Another pane to the "window of opportunity" (Silverstein, 1989) is viewed here, originally created by PL 99-457 and now further supported by PL 105-17, that considers the needs of families in providing the most appropriate options for their young children with disabilities.

ANGLO-AMERICAN PARENT ATTITUDES CONCERNING DISABILITIES

As has been shown throughout the literature concerning parents reactions to the birth of their young child with a special need, grief appears to be a universal response experienced by parents in the western world (Butler, 1983; Healy et al., 1988; Hynan, 1987; McCollum, 1984, Trout, 1983; Turnbull & Turnbull, 1997). Rutherford Turnbull and Ann Turnbull, researchers, parent advocates, and parents of an adult with a disability described the evolution of parent involvement in seeking out appropriate services for their children, the possible emotional attitudes exhibited by parents when attempting to adjust to their young child's needs, and the impact of parent reactions on the planning process (Turnbull & Turnbull, 1997).

They suggest that, "The nature of the exceptionality is closely related to the family's reaction to it. An uninsured condition requiring frequent medical attention may be a severe strain on the family's finances. A child with a terminal illness poses issues of grief and loss. A child with a hearing impairment presents a communication problem that pervades everyday existence—how to understand what the child wants and how to make sure the child is understanding the rest of the family" (Turnbull & Turnbull, 1997, pp. 25-26).

Parent's attitudes may also be affected by the severity and/or the visibility of the disability. Turnbull and Turnbull suggest that parents may be shocked at the time of birth but later feel relieved if the condition disappears. Guilt may be the underlying emotion harbored by parents that realize the presence of a disability later on in the child's formative years. Butler (1983), a pediatrician and a parent of a child with special needs confirms this in what she describes as her attempt to examine all her activities prior to and during the birth of her son that might have explained the causes. Denial of the child's condition may provide a rationale for masking the guilt and blame actually experienced.

Stigma and rejection may be evident when the disability is readily observable by others. Undue stress may occur when a child's difficulties are unclear and recurrent such as the case of a newly or incompletely diagnosed child with a learning disability. Other reactions described by parents include terror as the initial alarm response, anger with doctors, friends, relatives, impotence and frustration corresponding to a loss of power and control over the situation and future implica-

tions of the disability and depression related to the loss of future dreams (Butler, 1983; Hynan, 1987).

Tynan and Fritsch (1987) have discussed the stage models that have attempted to delineate the sequence of parent reactions. The stages include shock or denial, guilt, despair, depression, disappointment, and acceptance. The model connotes a linear progression of emotional reactions to the disability. This hierarchy has met with some resistance because it does not correspond to the variations of emotions expressed by parents occurring at different times throughout the child's life span, depending in part on the stress impacting on the family's situation at the time. Eden-Piercy, Blacher, and Eyman (1986) proposed categories of parental responses for professionals to be aware of including shock-guilt-despair, refusal-denial, and adjustment-recovery-acceptance. "By acknowledging the category of parental response, the supportive professional can better develop strategies for dealing with problems which parents are experiencing at that point in time" (p. 6). What appears evident in the literature is the presence of various emotional reactions of parents to the birth of their child with a disability that may appear in an un-patterned format at various times during the child's developmental period. These emotional reactions are susceptible to environmental demands and the type of condition present. The implications for any early childhood interventionist and/or counselor working with a family influenced by a western cultural style would be to take into account these attitudes when attempting to offer professional advice and assistance.

In addition to parent reactions, family characteristics, a component of cultural orientation, have been mentioned as influencing parent attitudes toward their young child with a disability. Turnbull and Turnbull (1997) have commented that:

> *Much research on families with members with exceptionalities suggests that larger families tend to be less distressed by the presence of a child with an exceptionality ... The presence of a supportive husband seems to be a predictor of a mother's ability to cope with an exceptionality* (pp. 28-29).

However, in an interview study conducted by Segal (1985), results indicated that only 3 out of 20 mothers identified their husbands as their support. Similarly, grandparents were infrequently mentioned as providers of support. The advocates that were named most frequently in the study and in other research (Butler, 1983; Trout, 1983) were other mothers of children with disabilities. The explanation for the discrepancy evident here, may be found in the exploration of cultural differences.

The recognition of supportive networks outside the family unit is culturally determined by the individual versus collectivist orientation described by Triandis, Brislin, and Hui (1988) in their cross-cultural training efforts. U.S. cultural style is characterized as individualistic (Harris & Moran, 1987). Individuals tend to seek out support groups outside of the immediate family unit whereas collectivists rely on the built in supports interwoven in the extended family situation. Large families may resemble the inter-working aspects of the extended family orientation found in societies such as Micronesia. As the Turnbull and Turnbull (1997) so cogently remark, "Cultural background lays a foundation of values and perspectives of the world that help the family define who we are. These values and perspectives play an important role in shaping a family's reaction to a disability" (p. 31). This attitude has been expressed elsewhere (Copeland & Kimmel, 1989; Kalyanpur & Harry, 1999) and will be furthered examined in this article. A thorough description of the culture of Micronesia is warranted here, to be used as an example of a collectivist societal structure.

THE CULTURE OF MICRONESIA

Micronesia, an archipelago of over 2,000 islands, with approximately ninety of them inhab-

itcd, stretches across 3 million square miles of Pacific Ocean above the equator, in between Hawaii and the Philippines. The land portion of Micronesia is only 923 square miles in total. As many Pacific Basin travelers describe it including Bendure and Friary (1988), "Though they (Micronesia) cover an ocean expanse the size of the continental U.S., their total land mass is less than Rhode Island, the smallest U.S. state" (p. 7). The island groups found in the region include the Marianas, Caroline, and Marshall Islands. The total population across five countries is less than 500,000 people (Sadao, Robinson, & Magrab, 1997). There are five distinct political entities and even more distinct cultures and languages.

The most urbanized and assimilated to the U.S. culture is the territory of Guam, colonized by the Spanish in the 19th century and impacted by the U.S. military influence since World War II. Next are the Commonwealth of the Northern Marianas Islands, the Republic of Palau, the Republic of the Marshall Islands, and the Federated States of Micronesia encompassing four unique island countries of Yap, Pohnpei, Chuuk, and Kosrae. Prior to 1986, the area was organized as the Trust Territories of the Pacific Islands, a U.S. protectorate resulting from the conditions defined under WWII policies. The various Island Nations are in the throws of both a political and social upheaval with the dawning of the new political freedom they possess. The major issues to contend with have been the impact of the U.S. and previous colonist's influence on the shift from a subsistence economy to capitalism and on the attempt to maintain existing cultural values within a changing society.

Micronesians value cooperation and group consensus and place significant importance on face saving. The group consensus method of dispute resolution was a cultural match for some of the Islands that developed interagency coordinating councils under the auspices of creating early childhood services for children with disabilities through the fiscal support of incentive monies resulting from the passing of PL 99-457 (Sadao, 1997). As a collectivist society, Micronesians avoid confrontation, disagreements, and competition, seek the establishment of long term, trusting relationships, link status to age, gender and family name, and prioritize social relationships over written contracts (Sadao, 1997) incorporating indirect modes of communicating with others. The custom of feasting and celebration plays a central role in the activities of the collective. Leaders, the key players in communal functioning are highly respected by other group members, which is evident in the giving of gifts during feasting time. Community members are expected to share resources and participate in tasks requested by the leader or leader's representative. Conklin (1984) summarizes the generalities of the Micronesian culture as follows:

> *While the specific behaviors and their relative articulation vary from culture to culture, putting oneself forward, directly challenging or demeaning another, and disturbance of consensus are generally negatively valued...Many native practices stood in sharp contrast to the expectations of the colonists. Western and Japanese values concerning the accumulation of capital, the moral imperative to work as hard as possible, and American values concerning equality and egalitarianism and decision by debate and by vote were at obvious odds with the deeply held Micronesian sense of self and clan and indigenous standards for individual and group behavior...The traditional cultures of Micronesia are well adapted to the islands' natural environment and embody social patterns of interdependence, cooperation, and harmony that are the goal, and envy, of cultures around the world* (pp. 18-19, 49).

The mainstream American belief of equality and promoting the inalienable rights of the in-

dividual is in direct contrast with the collectivist group orientation found in Micronesian culture. This U.S. attitude in terms of a child with a disability is at odds with a collectivist viewpoint of including members within a group who demonstrate varying degrees of ability to participate according to prescribed roles in collective functioning.

MICRONESIAN PARENT ATTITUDES CONCERNING DISABILITIES

Although there has been an increase in research on cross-cultural family attitudes during the last decade (Hansen & Lynch, 1998; Kalyanpur & Harry, 1999) limited research is available on Pacific Islander families of children with disabilities. In 1961, western style formal education, including special education programs introduced at a later date, were basically transferred from U.S. to Micronesia without much consideration of the appropriateness of those programs in a developing region of the world. The assumption was that the American way was the most acceptable option for developing individual potential and providing services to children who were segregated and left out of the mainstream of society. In 1979, when special education was initiated in the region, education became the largest public institution, employing the highest number of hired public sector workers. As Conklin (1984) describes, "Suddenly American contract and or Peace Corps workers took up residence and began directing education of the young...This separated them from their home communities in critical formative years, undermining traditional authority, and creating a trend toward urbanization which had both cultural and economic consequences far beyond the numbers of the students themselves..." (p. 9). Control of education moved from traditional leaders to Americans. "Micronesians now came to think of education as a responsibility of the distant American authorities, neither structured to their needs nor requiring their cooperation" (p. 9).

Several beliefs that correspond to supernatural attributions were identified in the 1983 compilation of Micronesian values and beliefs, by Community College of Micronesia students (Ashby, 1983). For instance, in the Chamorro culture, "if a woman is pregnant, and the moon is in its first quarter, she should not look at it. If she does, her baby will be born with a cleft palate" (p. 30). In Chuuk, a potential emotional and/or physical problem related to the symptom of frequent crying is explained by "If a pregnant woman goes out frequently at night, her new baby will tend to cry often" (p. 106). In Pohnpei, "Wearing flowers will bring bad luck to the pregnant woman" (p. 186). Nutritional imbalance is often associated with the resulting disability (Chan, 1987) as demonstrated by this Kosraean belief: "If a pregnant woman does not receive and eat the proper foods, her new baby will have an unwanted birthmark" (p. 198). Palauans attribute the birth of a child with a disability to a wrongdoing committed within the family.

On one occasion in Palau, where the early interventionist suggested to the grandparents of a young child with a physical disability that repair of a club foot was feasible through a referral to Shriner's Hospital, the family refused the service. The reason was that the condition was a result of a family member's offense. Correcting the physical problem would not solve the cause of the dilemma (K. C. Sadao, personal communication, 1988). Attaching spiritual causes for illness and the resulting scientific/spiritual clash that may occur is evident in Asian immigrant acculturative experiences in California. Fadiman (1997) in an account of a young Hmong infant's illness, recognized as "the spirit catches you and you fall down" in Hmong culture, is due to a belief that epilepsy is caused by the soul being snatched by an evil spirit. Conflicts in treatment regimens were evidenced because of the differences in belief systems between family and medical professions.

Similarly, Pacific Islands strongly influenced by Christianity may attribute disability and/or ill-

ness to "the will of God" as mentioned by Limptiaco (1986). Scientific reasons are seldom recognized as plausible factors in causation. Denseco (1997) presents the differences between culture and science as follows:

> *The dichotomy itself, between parents' biomedical and sociocultural beliefs, may reflect investigators' Western-based theoretical orientations and biases towards biomedical perspectives. Biomedical orientations are cultural tools, as are parents' sociocultural beliefs, but scientifically-oriented beliefs are tacitly assumed to be valid. Professionals in early intervention may tend to adopt such a posture (i.e., only folk beliefs that have corresponding biomedical explanations or beliefs which have underlying scientific explanations, can be considered valid). This is unfortunate because research that does not go beyond such a dichotomy will very much perpetuate a parent-deficit perspective* (p. 49).

Secondly, an important aspect of a collectivist society is the extended family/community orientation that allows children with disabilities to be cared for by the collective. Ogan and Kiste (1987) remark, "...among the most important indigenous value for Pacific Islanders was the primacy of group interests over individuals as such, with the corollaries of sharing, mutual assistance, and care for those members of society (children, the elderly, the physically and mentally disabled) less able to care for themselves." (p. 5). Pacific Islanders rely on the collective network for support and may seek out advice from available western medical facilities but also investigate traditional medicine options. Child rearing is the responsibility of the collective. As Limptiaco (1986), a parent, parent advocate, and special education administrator in Guam, relates: "In the event of the death of a natural parent, adult family members traditionally assume the responsibilities of caring for the children. In this manner, families with handicapped children share the burden of raising them" (p. 61). Children with special needs may be unable to handle the demands of formal American schooling but may have a contributing role in the community as Falealii (1986) emphasizes, "Life in an extended family requires each family member to assume a productive role. The contribution may not be limited to financial support-it may include a hand in cooking, fishing and farming. Students labeled as mildly or moderately handicapped during school hours return home to become contributing members of the family and fully integrated into the mainstream of village life" (p. 71).

Additionally, children are looked upon as lacking appropriate emotions and are not expected to attain them until much later on in their developmental years. Acquisition of culture is connected with the nurturing of certain characteristics such as control of inner feelings and eliciting appropriate judgment of human interactions. Lutz (1983), in her description of the Ifaluk's emotion of metagu, indicates that, "Before the age of five or six, the child is considered to have few thoughts or motivations beyond those of eating or playing. As young children are not capable of knowing right or wrong, their aberrant behavior must be either ignored or tolerated...They may learn however, through imitation of peers or adults" (p. 251). Children with special needs may have an opportunity to learn along with their peers and siblings without the pressure of expected age level performance. Community based activities may be appropriate for these children to participate in. If neither of the above two options is available, children are assured caretaking by the built in extended family support system.

To summarize, supernatural beliefs ascribed as attributions for disabilities would indicate some tendency by Micronesians to exhibit grief, guilt, denial, and shame. They may not show frustration because it negates their inner value of control

Table 1
Anglo-American Mainstream and Micronesian Cultural Values: Influence on Parents Attitudes Concerning Disabilities

Mainstream Values	Effect on Parent Attitudes Concerning Disabilities	Micronesian Values	Effect on Parent Attitudes Concerning Disabilities
Individual autonomy	Friends, other mothers as support network	Collective	Extended family as support system; child with a disability as part of the group
Achievement orientation	Guilt-grief; deny child's inability to achieve as expected	Subsistence for survival	Child's basic needs are met older siblings as caretakers
Subscribed Status	Frustration over loss of potential for attaining status	Status from birth	Possible loss of status at birth/ other siblings assume position; certain children considered for care based on status
Competition & Confrontation	Frustration, anger, guilt; child's inability to compete with peers	Cooperation and Consensus	Dissipated guilt; not frustration; may agree to early intervention but not follow through on goals set
Future time orientation	Powerless; may be unable to plan child's future; concerned about possibility to overcome disability	Present/Past time orientation	Interested in cause; stigma attached; blamed on supernatural causes of a family members wrongdoing
Belief in control over the environment (internal locus of control)	Anger & frustration with the possibility of the child not meeting society's and parent's expectations	Belief in fate-environment is unpredictable (external locus of control)	Can't change condition; importance of caring for only the physical needs of the child
Rational scientific approach	Parent may opt for therapy/treatment provisions to ameliorate problems	Superstition/ folklore, supernatural attributions, black magic	Cure with traditional healing methods, accept condition, offer retribution for family member's wrongdoing
Sequential problem solving	Parent's attempt to seek out outside assistance; consider options & solutions presented by professionals	Nonlinear problem solving	May not seek out solutions; problems posed by condition are dealt with as they occur within context of the collective needs
Independence	Lose goal to have child function independently	Interdependence on clan	Child cared for by extended family
Capitalism	Potential for attaining wealth is threatened	Collective wealth	Child may be unable to contribute to the continuation of the clan functioning; others take over responsibility

Table 1 continued

Learn by mistakes	Disability may be more readily accepted as limiting normal development; repetition and drill may be frowned upon	Practice/rehearsal until perfected	Parents may not expect learning to occur; won't seek out assistance; child may not be able to learn by observing; may learn with assistance from siblings; practice acceptable
Patrilineal	Father decision-maker/responsible for wealth/status; child's disability impacts parent's feelings of inadequacy	Matrilineal	Decision-making in female line-extended family important
Freedom of choice/ rights of individual	Assert needs publicly; public agencies available for accessing services; universal health and education; more acceptance of individual differences	Maintaining face in public/ rights of the collective	Child remains within clan; clan maintains responsibility of providing for child; seeking out public sector assistance is viewed as inappropriate

and harmony. Anger is typically not valued and unacceptable. The extended family assuming child-care responsibilities would tend to dissipate any anger present. Acceptance would occur more readily because a child with a disability would be cared for and not expected to participate fully in communal activities. Table 1 outlines the cultural values of Pacific Islanders in comparison to the Anglo-American mainstream culture.

IMPLICATIONS FOR EARLY INTERVENTION PROGRAM INTRODUCTION AND THE CONCEPT OF PARENT/ PROFESSIONAL RELATIONSHIPS

In the U.S., research has revealed that parents and professionals may differ in their values toward early intervention services (Bailey, 1987; Degangi, Wietlisbach, Poisson, & Stein, 1994; Harry, Rueda, & Kalyanpur, 1999; Kalyanpur & Harry, 1999; Lynch & Hanson, 1998; Turnbull & Turnbull, 1997). Parents' complaints have centered on professionals' lack of responsiveness to the voiced concerns of families—their child-centered treatment approach. Bailey (1987) cautions that "Family services are often based on the interventionist's perception of family needs, resulting in a conflict of values or priorities" (p. 61). Cultural values add to the potential differences observed in parent/professional partnerships. Yacobacci-Tam (1987) expresses the point as follows: "Especially in cross-cultural interchanges a person must be aware of values held by the differing cultures to guard against forcing personal viewpoints onto someone who does not share perceptions of their value" (p. 18).

As depicted in Figure 1, many aspects of their cultural backgrounds and beliefs affect parents and professionals. Learning about one's own cultural preferences helps the professional then seek out information about the parent's different customs and traditions that influence the way they think about working with a professional and how they view their child's needs. Once the intersecting cultural paths can be solidified, the parent and professional gain insights into a cultural relationship based on mutuality. Kalyanpur and Harry (1999) defined this interchange as cultural reciprocity.

Bailey (1987) suggests collaborative goal setting as a method for dissolving parent-professional conflicts in which the parents and professionals decide upon intervention directions via co-

operative planning ventures. In American culture, future goal orientation is highly valued and pursued. In Micronesia however, controlling the environment through planning is a foreign concept only recently introduced by urbanization trends.

Collaborative goal setting may also be mediated by the role of elders within the extended family hierarchy and/or the position key traditional leaders hold in communal decision-making efforts. Interventionists may not be the most appropriate direct linkage to parents and families that may benefit from early intervention treatment models. As Serpell (1988) identifies, "Because of their privileged access to relevant cultural knowledge and skills, local level workers in the health and social services, local mainstream primary school teachers, and families in the neighborhood with other disabled children are the strongest candidates for designation as primary agents in rehabilitation programs..." (p. 274).

It may be essential to consider the other potential partners and/or main informants to include in the collaborative relationship in addition to and/or besides the parents.

Bailey (1987) identified the difficulty for some service providers to relinquish the role of active problem-solvers resulting in parents agreeing to an activity presented, but avoid any efforts to attain the designated goal. This tendency of parents to agree with an expert verbally and display behaviors or lack of expected follow through that indicates otherwise, may be evident in Micronesian cultures where cooperation and face saving are valued behavioral response modes. Families may agree with the professionals' suggestions that they perceive to be the most acceptable response expected by the professionals, even though they may not agree or understand the concept being presented. Offering solutions and treatment options may require a filtering mechanism, that of main family contact person (i.e., case manager, leader, family elder) and be presented only when the family and/or leader has requested such assistance.

Indirect modes of communication may be a more appropriate bridging strategy than more assertive American styles of presenting information, in fostering a collaborative and trusting relationship with a family. Conklin (1984) compares the styles as "An elder passes his wisdom on to his chosen successor only very gradually and partially... This suggests an indirect perhaps circular questioning approach, rather than the linear, direct method that is the basis for the scientific mode of thinking that underlies Western thought" (p. 10). Use of figurative language in the context of storytelling is another method of information sharing.

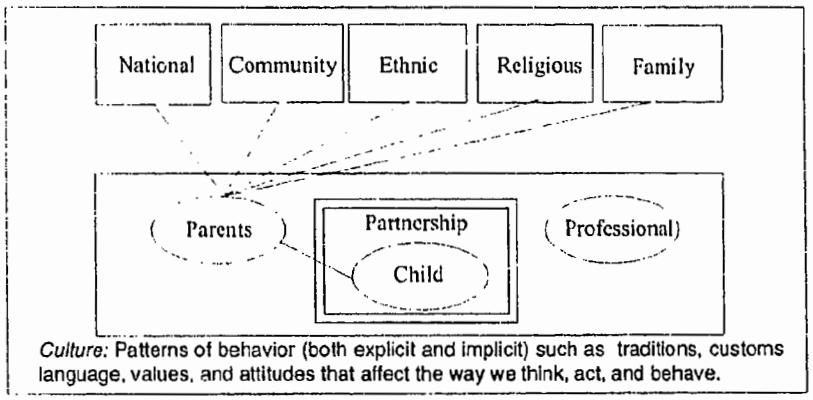

Figure 1. Cultural Influences on Parent Attitudes Concerning their Young Children with Disabilities: Implications for Fostering Parent/Professional Relationships

Table 2
Suggestions for Fostering Cultural Mutuality when Developing Parent/Professional Liaisons with Pacific Islanders

1. Develop a trusting relationship with a key informant from the ethnic culture.
2. Familiarize yourself with local customs and norms.
3. Assess the perceptions of the child with a disability in the extended family unit; find out about causal factors recognized by the community.
4. Be willing to engage in circular discussions.
5. Accept gifts in acknowledgment of services rendered; find out appropriate ways to also acknowledge informants' availability to you.
6. Examine the local channels of authority and the hierarchical protocol.
7. Explore people's perceptions of disabilities in the community as it may relate to the prevalence of particular disabilities.
8. Avoid asking pointed questions without explanation or offering limited choices that require a direct answer and selection of the alternatives presented.
9. Limit choices that require a direct response.
10. Identify the most appropriate and convenient time and place for a meeting to occur.
11. Exhibit patience and flexibility regarding time commitments.
12. Avoid complex language structure when presenting theoretical models or explanations of technical assessment information, etc.; try story telling as a means to share information.
13. Know your own value system and how it influences your judgments and perceptions.
14. Provide an opportunity for local clientele to observe and experience potential intervention strategies in community settings.
15. Provide adequate time for family decisions to be discussed with other group members/leaders.
16. Be aware of the importance of face saving and respecting family name.
17. Describe your perspective/habits/ reasons for asking particular questions in accordance with your cultural orientation.
18. Be aware of local dress, communication styles, customs, and identify appropriate channels to access this type of information from.
19. Continue to cross-check your individual feelings of frustration, confusion, etc. with cultural orientation.
20. Avoid outward confrontation/disagreement, especially at a large group gathering.
21. Delay initial judgements of possible conflict until reflecting on values that may be influencing your reaction.
22. Flexibility is the key; always fall back on this quality when all else fails.

Time in the U.S. is a valued commodity for accomplishing tasks. Because Americans stress goal-attainment, efficient use of time is culturally rewarded. Micronesians view time in a different manner. Destiny is prescribed by the happenstance of environmental occurrences and may also be attributed to spiritual influences, totally outside the realm of individual control. Lateness to an appointment would not be thought of in a negative way, especially if extended family matters were more pressing at the scheduled appointment time. Yacobacci-Tam (1987) highlights this difference. "Demanding punctuality without providing clarification can distance school personnel from parents, even when the parents are quite concerned about the well-being of their child" (p. 19). Just as important as acknowledging time factors, is recognizing nonverbal communication styles and dress that conforms to the dictates of local norms. In Micronesia, for instance, it would behoove a female service provider to wear informal business attire, suitable to warm climates that covers shoulders and knees to convey respect for the acceptable form of dress for women. Other types of informal body language to be aware of is acceptable distance between speakers, limited dis-

play of physical affection in public (hand shaking is appropriate) and facial gestures such as eyebrow raising or smiling to indicate understanding of the speaker.

Another important aspect of collaborative relationship building between parents and professionals, is how the parent views the expertise of the early interventionist. U.S. mainland based consultants presenting parents with an opportunity to have an opinion regarding their child's future growth and development may look upon the professional as then incapable of handling the decision-making process, since the expectation is for the professional to assume the role of expert. Assigning the role to the parent may indicate that the professional lacks the skills to perform the intervention adequately and conflicts with the assumed status level of the professional.

As Limptiaco (1986) contends, the family name is to be protected within the dictates of cultural values and norms. Parents may view the seeking out or accepting assistance from a public sector professional as being outspoken in the communal sector and may attach a shame factor to interacting with service providers within the privacy of the home environment. Chan (1987) explains the situation from a traditional Asian perspective that parallel's Micronesian belief. "Within the context of traditional behavioral dictates, such disclosure may be considered a betrayal of family loyalty of trust, an act of weakness, and/or a form of disgracing the family's honor or reputation" (p. 46). The service provider would need to be sensitized to this component of family/extended family face-saving versus directly addressing the individual needs of the child. By nurturing the relationship with the family through the investment in establishing trust and personal rapport and demonstrating a willingness to be available to listen to discussions that may vaguely relate to the targeted topic, mutuality can be accomplished. Providing options for when to meet, where, with whom, etc., in a flexible fashion, are important skills for a service provider in a collectivist society to incorporate into their communication format and style. Because Micronesian learning style promotes indirect acquisition of skills and knowledge through imitation and observation of others, and practice before group presentation, a professional may want to provide opportunities for parents, siblings, and community case managers to hear about possibilities for treatment options. Additionally, occasions to observe the therapeutic models within the community environment might be organized, before requesting for a choice to be selected.

SUMMARY

Bailey (1987) reviews professional competencies essential to collaborative goal setting as follows: "Understanding the context within which a family functions, conducting systematic assessments of family needs, and listening to families form the foundation for resolution" (p. 68). Professionals need to recognize the cultural and social context that determines family values and impact upon family needs. In newly developing nations, which tend to be more collectivist in nature, and immigrant populations that move to urban areas from these locales, it is the responsibility of the mainstreamed professional to take into account the cultural milieu they are from. Also of concern are the ethnic culture of the family, and the appropriateness of introducing early intervention models in societies and families that vary from Anglo norms and assumptions.

Parents and professionals' attitudes toward children with special needs and treatment programs differ in the U.S. and are identified as barriers to promoting effective parent/professional partnerships. In a dissertation study conducted by Arndt (1987), significant differences were found in the perceptions of the interventionist's ability to avoid personal biases in selected materials appropriate for the child or impinge upon professional judgement even though overall results indicated a general congruency between mothers and interventionists. Compounding the issue in the Pacific Basin is the very different cultural values

and norms ascribed to by community members in regard to the treatment of young children with special needs and the role they play in the collective unit. To assure the success of early intervention programs for children with disabilities from different cultural backgrounds, professionals need to recognize the following influences: (a) how society currently views the child's growth potential and in turn, (b) how that value influences the role the young child with a special need subsumes within the family unit and community at large.

The following benchmarks (see Table 2) are for professionals to consider when embarking on fostering mutuality between themselves and a parent of a child with a disability. The suggestions are offered as general guidelines to follow when entering a cross-cultural encounter with a family.

Part H and now Part C requirements for the development of an Individualized Family Service Plan, encompassing family involvement in the formulation of the goals and strategies, can be effectively accomplished in settings where cross-cultural dilemmas may occur. Professionals must develop an awareness of the cultural influences that may define the actual process in a different manner than what might be expected in a westernized setting. Bailey (1987) recommends that "interventionists may need to sacrifice strong beliefs about intervention, however, in favor of collaborative goal setting" (p. 69). Mainstream professionals need to be aware of the value incongruences they may possess as compared to other cultures and reflect upon the issue by increasing their own cultural awareness and sensitivity, before attempting to foster parent/professional partnerships in cultures other than their own.

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Developing Scientific Minds: The Use of Mediated Thinking and Learning to Facilitate Enhanced Student Outcomes

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This preliminary study investigated whether a mediated thinking and learning (MTL) infused science curriculum would facilitate transfer of thinking skill development into student achievement. The achievement of four classes of third grade students (two using MTL curriculum and two using standard curriculum) were compared on content mastery and transfer of thinking skills into content. Compared to monolingual English speakers from higher socioeconomic status (SES) taught the standard curriculum, the experimental MTL group of low SES emerging English speakers performed as well on mastery of standard content questions, and significantly better on the measure of applied thinking skills. Groups using MTL curriculum demonstrated significantly higher achievement than their counterparts with equivalent SES and language proficiency who had used a standard curriculum. This study provides support for MTL as useful in consultation for school psychologists working with teachers to assist students, including emergent English speakers, to develop effective thinking skills.

Effective educational intervention often goes beyond work with individual children to focus on larger systems and subsystems, such as classrooms or grade level curriculum. A decade of initiatives from federal and state educational agencies and professional associations called for changes in instruction and related services; for example, more effective instructional programs, maximizing instructional options within general education, and developing alternative service delivery models. From Madeline Will's (1986) *Regular Education Initiative* to the Individuals with Disabilities Education Act of 1997, mandates called for more [special education] inclusion in general education, greater emphasis on support for regular class teachers, increased instructional time, and new instructional approaches. School reform initiatives have been paralleled by calls for reform in school psychology (Reschly, 1988; Reschly & Ysseldyke, 1995). Training standards and future directions identified school psychologists as data-based problem-solvers and interventionists.

The assumptions school psychologists hold about the nature (and nurture) of effective teaching and learning will influence the interventions they foster. California's school psychologists must work from a theoretical base in learning that considers and respects issues of second language learners, their cultures, and communities. Equipped with such a theoretical base, consultation and partnerships with teachers to develop and evaluate curriculum and interactions for curricu-

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lum delivery emerge as responsive to a diversity of children within the context of broad national concerns.

Two such national concerns became central in this mediated curriculum development project, Developing Scientific Minds. First, all students, with and without disabilities, need to enhance their thinking and problem solving skills. Second, both general and special education teachers must become competent facilitators of such thinking and problem solving.

For well over a decade, developing the higher-order thinking of America's youth has been a persistent theme in educational reform, yet low-level cognitive work has continued to dominate classroom life (Brown, 1991; McNeil, 1986; Onosko & Newman, 1994; Powell, Farrar, & Cohen, 1985). American children do not learn to think deeply enough or to deal with issues broadly enough across a wide range of academic subjects (Annie E. Casey Foundation, 1996; Applebee, Langer, & Mullis, 1989; Langer, Applebee, Mullis, & Foertsch, 1990; Mullis & Jenkins, 1988, 1990). Estimates place of half our nation's youth at serious or moderate risk, finding students at every grade level deficient in higher order thinking skills, and underscoring that those risks are compounded for the poor, and for members of racial or ethnic minorities (Carnegie Council, 1989; Knoff, Curtis, & Batsche, 1997; National Educational Goals Panel, 1994). The Carnegie Council (1989) warned that "the pervasiveness of [this] intellectual underdevelopment strikes at the heart of our nation's future prosperity" (p. 27).

The development of thinking and problem solving skills has as much a place within special education services as in general education. However, many children are (mis)placed into special education as an "intervention" because of academic and cognitive skills which *should* have been the target of systematic intervention within general education (Knoff et al., 1997; Shinn & McConnell, 1994). The effects of cultural and socioeconomic differences compound the risk of misplacement. Although current laws now mandate more extensive interventions prior to placement, unless school psychologists can evaluate and support the development of interventions for thinking and problem solving skills effectively, we risk being part of the problem rather than part of the solution.

Problem-solving activities now appear in state curriculum guides and newer textbooks; however, most teachers have little or no training in how to foster these skills. While teachers can recognize (and reward) understanding of content, they have trouble articulating rules of effective reasoning that govern ways of knowing within particular disciplines (Langer, 1994). Support for teachers to collaborate, engage in independent thought, and build skills in understanding the nature of thinking, analyzing, and problem solving remains a significant national need (Duffy, 1994; Elmore, 1992; Onosko, 1991).

In responding to a questionnaire about what would be most helpful in implementing such a shift in the teaching process, teachers in an early pilot study suggested that training in the new methods be supported by peer coaching (Robinson-Zañartu & Campbell, 1998). Although most teachers who study theory, observe demonstrations, and practice with feedback gain skills in new models, relatively few transfer new skills into their active repertoires without additional information and support (Joyce & Showers, 1982; Pressley, 1994). Coaching and in-class training by a supportive and more skilled peer, provides modeling, reciprocal feedback, support, and assistance in refining new skills and methods (Chamot & O'Malley, 1994; Showers, 1984). Coaching can help enhance not only teaching skills, but collegiality and attitudes about teaching culturally diverse students (Dalton & Moir, 1991; Galbraith & Anstrom, 1995).

Theoretical Background

Mediated Thinking and Learning (MTL) provides coachable interactions between teachers and students, and a vehicle through which think-

ing skills are developed. It draws from existing theories of [cognitive] mediated learning, with Feuerstein's (1979; Feuerstein, Jensen, Hoffman, & Rand, 1985) theory of structural cognitive modifiability, his enumeration of mediated learning experiences, and Jensen's (1992) Modifiability Enhancement Theory as perhaps the most predominant. Their work emerged from and in some cases paralleled that of other key theorists: Vygotsky's (1962, 1978) cultural-historical theory of human development, the genetic epistemology of Piaget (1952), and Luria's (1966a, 1966b) neuropsychological investigations of brain-behavior relationships. In addition, it became clear that for mediational approaches such as MTL to meet the needs of culturally and linguistically diverse children, they must incorporate cultural context and meaning overtly. A cultural knowledge base became central (Robinson-Zañartu & Aganza, in press), and drew from the work of socioculturalists and social constructionists (e.g., Burr, 1995; Gergen, 1985, 1994; Rogoff, 1990; Vygotsky, 1978). This addition helped situate and contextualize cross-cultural dynamic assessment and mediated interventions.

Mediated Thinking and Learning (MTL) involves the intentional application of specific and focused interactions to a relationship with another person (often a child) to help them access cognitive functions and optimize their thinking skills for the purpose of constructing and using meaningful knowledge. Those interactions may be initiated by teachers or other interventionists, and may target the transmission of culture (e.g., learning spatial relations in setting a table; use of order and sequence in prayers; temporal orientation and precision in ceremonial dance), or the development and use of thinking skills for active school-based learning (e.g., using multiple sources of information or hypothetical thinking in scientific problem solving). The same cognitive function development may be targeted across situations and mediators (e.g., home and school), working to proceduralize these thinking skills within new areas of content, and build cognitive flexibility.

Mediated Thinking and Learning (MTL) supports the development of cognitive functions and motivational supports for approaching and solving problems through socially meaningful contexts as well as through the curriculum. When the context is the curriculum of the school, teachers assume key roles in the enhancement of the child's cognitive development, facilitated by use of meaningful contexts. To deliberately coordinate cognitive development across contexts accelerates and enhances the process. An early pilot study of such coordinated efforts were found to be extremely promising (Campbell, Robinson-Zañartu, & Portman, 1998).

A major goal in the mediation of cognitive functions is their far transfer. Gagné (1970) defined transfer distance as how broadly individuals could transfer what they had learned in one situation to a new situation. In the case of mediated thinking and learning, what is sought is not only proximal or near transfer of newly acquired (mediated) thinking and learning skills to highly similar cognitive tasks, but far transfer, where those mediated thinking and learning skills are applied, or transferred, to more distal domains such as reading, math, and problem solving. In addition, the goal includes enhanced ease and flexibility with which learners continue to transfer and approach new information and problem-solving.

Over the past two decades, researchers working within dynamic assessment and mediated learning paradigms have found significant changes in the manifest levels of cognitive functioning of both school age and adult learners (Campione & Brown, 1987; Johnson, 1996; Lidz & Peña, 1996). Jensen and Singer (1987) provided clear evidence for the acquisition and near transfer of new cognitive functions. However, evidence suggested that far transfer from enhanced problem-solving to enhanced academic performance did not automatically transfer to new content areas, but must be deliberately taught (Reschly & Robinson-Zañartu, 2000). Jensen (1992) clarified this problem as the

need to proceduralize knowledge, to infuse new cognitive processes into content or knowledge areas and to assist the learner to develop flexibility and adaptability in novel contexts. This paralleled proposals of other researchers working with dynamic models of cognitive modifiability (e.g., Greenberg, 1990; Jensen, 1992; Salema & Valente, 1990) that instructional models be developed that systematically addressed transfer to specific school curricula. The Developing Scientific Minds Project, infusing mediated learning and thinking processes into a third grade science unit, was a response to this challenge.

Purpose

The purpose of this study was to compare the achievement of third grade students taught a science unit using mediated thinking and learning (MTL) to the achievement of third grade students taught the science unit using standard methods of instruction. Further, it was our purpose to determine differential effects of the levels of English proficiency and of socioeconomic status (SES).

It was hypothesized that (a) higher SES monolingual English speaking students would perform significantly better on teacher-made tests of content mastery and thinking skills than emerging English speaking students with lower SES when both groups were taught using standard methods of instruction; (b) lower SES, emerging English speakers taught using the MTL science curriculum would perform significantly better on teacher-made tests of content mastery and thinking skills than lower SES, emerging English speakers taught using standard methods of instruction; (c) there would be no difference in achievement on teacher-made tests to assess content mastery and thinking skills between lower SES, emerging English speakers taught using the MTL science curriculum and higher SES, monolingual students taught using standard methods of instruction; and (d) higher SES, monolingual students taught using the MTL science curriculum would demonstrate higher level thinking skills than higher SES, monolingual students taught using standard methods of instruction.

METHOD

Four third-grade teachers (two experimental and two control) participated in the study. Two third-grade classroom teachers (one experimental from each of the two school sites) volunteered to receive in-service training in the Mediated Thinking and Learning (MTL) theoretical model and its application to the district's science curriculum with support through peer coaching. Two third-grade classroom teachers (one control from each of the two school sites), selected as comparable teachers by their peers, prepared and delivered the science unit lesson plans using standard methods of instruction.

Seventy-three eight- and nine-year-old third grade students from two school sites within a north San Diego County school district participated. Each school had an experimental and a control classroom. The two schools provided an opportunity to compare different populations in terms of ethnicity, English language proficiency, and socioeconomic status (SES), while using similar educational philosophies, curricular guides, and school district resources. School A, 72% Latino, housed 39 of the students, a large majority of whom were second language learners. To ensure within-school comparability, both School A's experimental and control classes were selected from the same track within a four track district-wide system, and were comprised mainly of Latino students with emerging English skills. English proficiency was rated by classroom teachers using a 5-point Likert Scale (1 = No English, 5 = English Proficient). School B, 28% Latino, housed 34 students. Students from School B were also selected from the same track, but these were comprised mainly of monolingual English speakers rated English proficient by their teachers. SES was determined by school reports of families receiving AFDC. All students in both schools were randomly assigned to classes by their respective adminis-

trations. Although SES status for individual students was not determined, we presumed that random assignment to classes would result in classrooms with comparable SES to that of the entire school population. School A had twice as many families receiving AFDC with 65% of students on free or reduced fee meals program, contrasted with 37% at School B.

Procedure

Two schools with broad socioeconomic and linguistic diversity were selected for this pilot. Hands-on practice, partnerships, shared responsibility, intersystem collaboration, and strong attention to cultural uniqueness characterized the MTL intervention model. Working from existing district curricula, four cognitive functions and five interactions from the Mediated Thinking and Learning (MTL) model were integrated into the third grade science unit curriculum on space. The five interactions central to the model include: (a) reciprocal interactions, (b) linking to thinking, (c) guiding behavior, (d) meaning and context, and (e) competence building. Four cognitive functions or thinking skills were chosen (from a list of 45) as the cognitive foci based on their applicability to the space unit and teacher requests to limit initial items to integrate: (a) planning behavior, (b) comparative behavior, (c) temporal orientation, and (d) the need for precision and accuracy.

Each of the four participant teachers selected a month in the Spring semester to teach the science unit on space. All four used the School District Curriculum Guide as a framework, with the two experimental groups having infused MTL. Prior to classroom introduction of the unit, each participating teacher was given access to the three unit post tests. Following delivery of the unit, all participating students were administered three teacher-made tests of achievement by their respective classroom teachers. To assure standardized evaluation of all three measures across the four classrooms, scoring of all test data was completed by one teacher, although she was aware of group assignment. A special education teacher previously trained in the MTL model provided biweekly peer coaching to the experimental teachers during the month the unit was taught. The district school psychologist (second author) and the university trainer (first author) provided four in-service training sessions, held after school during release time provided by the District, and consultation. Teachers also viewed a videotape introducing and demonstrating MTL theory and curriculum infusion, developed by the first author and third grade bilingual mentor teacher previously trained in MTL. With consultation, the collaborating staff developed detailed, written MTL lesson plans. Homework for the MTL unit was designed to validate the experience, culture and language of the home. Control teachers used their usual individual teaching styles, and did not receive in-service training or coaching.

Measures

Following completion of the Space Unit, each teacher administered the three tests of achievement to their respective classes. Test 1, previously developed by district teachers as the standard district-wide measure for the space unit, assessed content mastery using a format of short answer, true/false, and multiple choice questions. Tests 2 and 3 were teacher-made tests developed by the Project participant teachers and coaches. Test 2 asked students to draw the planets in relation to the sun, assessing memory for the number, relative size and sequence of the planets in a visual modality. Test 3 assessed transfer and integration of one of the targeted thinking skills, comparative behavior, by requiring students to compare and contrast features of two planets using a teacher-made rubric with Venn diagram, an established educational method of assessing achievement.

RESULTS

Achievement of students in the two experimental third grade classes was compared to the achievement of students in the two control third grade

classes on the three measures. The school psychologist practitioner analyzed the data.

Chi square was used to analyze associations between categorical variables. An inspection of records established equivalence for age, sex, ethnicity, and English proficiency between School A's experimental and control groups. Ethnicity was determined from school records by parent report. Classroom teachers rated English proficiency of the experimental and control groups using a 5-point Likert Scale (1 = No English, 5 = English Proficient; $M = 3.6$ and 3.9, respectively). No significant difference existed between School A experimental and control classes for language proficiency. Significant differences did exist between School A and B for language proficiency and SES, $p < .01$. School A's population was significantly higher in Latino population with emerging English skills than School B's population ($p < .01$), and students from School A were from a significantly lower socioeconomic group than School B students, $p < .01$.

Descriptive statistics were computed for participating classrooms in both schools on all three teacher-made tests. Table 1 provides class means and standard deviations for Test 1 (Content Mastery), Test 2 (Visual Sequential Memory), and Test 3 (Comparing and Contrasting Thinking Skills).

In order to test the hypotheses of the study, group differences for each of the three teacher-made tests were analyzed using paired *t*-tests.

Hypothesis 1 was confirmed (monolingual English speaking students with higher SES would perform significantly higher on teacher-made tests that assess content mastery and thinking skills than emerging English speaking students with lower SES, when both groups were taught using standard methods of instruction). On Test 1 (Content Mastery), School B's control group performed significantly better than School A's control group, $t(16) = 11.36$, $p < .001$. On Test 2 (Visual Sequential Memory), School B's control group performed significantly better than School A's control group, $t(15) = 3.74$, $p < .002$. On Test 3 (Comparing and Contrasting Thinking Skills), School B's control group performed significantly better than School A's control group, $t(15) = -4.87$, $p < .001$.

Hypothesis 2 was confirmed (lower SES, emerging English speakers who were taught using the MTL science curriculum would perform significantly higher on teacher-made tests that assess content mastery and thinking skills than lower SES, emerging English speakers taught using standard methods of instruction). On Test 1 (Content Mastery), School A's MTL experimental group performed significantly better than School A's control group, $t(18) = 6.83$, $p < .001$. On Test 2 (Visual Sequential Memory), School A's MTL experimental group performed significantly better than School A's control group, $t(17) = 2.36$, $p < .03$. On Test 3 (Comparing/Contrasting Thinking Skills), School A's MTL experimental group performed significantly better than School A's control group, $t(18) = 5.79$, $p < .001$.

Hypothesis 3 was confirmed on two of the three tests (there would be no difference in achievement on teacher-made tests that assess content mastery and thinking skills between lower SES, emerging English speakers who were taught using the MTL science curriculum and higher SES, monolingual students taught using standard methods of instruction). On Test 1 (Content Mastery), School A's MTL experimental group performed at the same level as School B's control group, $t(15) = -1.58$, $p = .13$ (*ns*). On Test 2 (Visual Sequential Memory), School A's MTL experimental group performed at the same level as School B's control group, $t(15) = -.44$, $p = .67$ (*ns*). However, on Test 3 (Comparing/Contrasting Thinking Skills), School A's MTL experimental group performed significantly better than School B's control group, $t(16) = 2.1$, $p < .05$.

Hypothesis 4 was confirmed on Test 3—Comparing/Contrasting Thinking Skills (higher SES, monolingual students who were taught using the MTL science curriculum would demonstrate higher level thinking skills than higher SES, monolingual students taught using standard methods of instruction). School B's experimental group performed significantly better than School B's

Table 1
Descriptive Statistics for Third Grade Science Space Unit: Achievement Tests for Mediated Thinking and Learning (MTL) Infused Curriculum and Standard Curriculum

	School A (emerging English, low SES)						School B (monolingual English, high SES)					
	MTL			Standard			MTL			Standard		
	M	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*
Test 1	13.70	3.64	19	6.7	2.9	20	16.20	3.50	17	16.40	2.12	17
Test 2	2.95	1.13	18*	2.2	1.2	19*	3.31	0.48	16*	3.35	0.86	17
Test 3	2.50	0.83	19	1.0	0.9	19*	3.40	0.94	17	1.94	0.75	17

* Attrition due to student absences

control group, t (15) = 5.2, p <.001. On Test 1 (Content Mastery), School B's experimental group performed at the same level as School B's control group, t (14) = -.48, p = .64 (*ns*). On Test 2 (Visual Sequential Memory), School B's experimental group performed at the same level as School B's control group, t (15) = -.22, p = .83 (*ns*).

DISCUSSION

School psychologists must bring effective knowledge and skills to the development of interventions which address the large systemic issues facing schools. California's schools exemplify the exponentially expanding need to develop interventions useful for children from diverse cultural, ethnic and socioeconomic backgrounds as well as diverse levels of educational needs. This study addressed two such issues facing education today: first, the need to develop enhanced thinking skills for all students, including second language learners; and second, the need for teachers to learn to facilitate such thinking skills.

The central question of this study dealt with determining the effects on both thinking skills development and far transfer into content of deliberately infusing mediated thinking and learning into a standard curriculum. It responded to proposals that instructional models be developed which infuse and deliberately work on transfer of mediated thinking skills to the school curricula (e.g., Lidz & Peña, 1996; Perkins & Salomon, 1989; Reschly & Robinson-Zañartu, 2000). For the purpose of this preliminary study, we limited our assessment to student outcomes in achievement, often seen as the "bottom line," as well as the evidence of far transfer. Results of three measures demonstrated that mediated thinking and learning assisted students to achieve at higher levels than their non-mediated peers, and enabled them to apply comparative thinking skills to the content area of science (far transfer). These data suggest that MTL has strong potential to assist students to develop and use thinking skills in the curriculum, including the emerging English speaker in a general education classroom.

As hypothesized, typical results emerged from the control classrooms (standard curriculum), with the higher SES and English proficient students outperforming those with lower levels of English proficiency and socioeconomic background. However, this was not the case for the experimental classrooms, where mediated thinking and learning (MTL) processes were infused within the curriculum. On all three measures, the low SES, emerging English skills group demonstrated significantly higher achievement when participating in MTL infused curriculum. Compared to the higher SES, monolingual English speakers taught with the standard curriculum, the experimental MTL group of low SES emerging English speakers performed as well on the first

two measures of achievement, where they answered conventional multiple choice questions about the unit content, and drew pictures of the planets in relationship to the sun, depicting the correct sequence and approximate sizes. However, on the third measure, which required higher order comparative thinking applied to the content knowledge (far transfer), the experimental low SES, emerging English speakers with MTL experience significantly outperformed their monolingual English, high SES counterparts taught with the standard curriculum. This surprising finding serves as a powerful indicator that infusing mediated thinking skills through the curriculum may increase the power of that curriculum for emerging English speakers.

A similar finding with the high SES, monolingual group substantiates the efficacy of the MTL approach across groups. Higher SES, monolingual students in the experimental MTL group significantly outperformed the higher SES, monolingual control group (standard curriculum) on measure 3, which required higher order comparative thinking skills applied to the content question. It appears that the MTL infused curriculum demonstrates great potential for responding to students' need to develop thinking skills across levels of socioeconomic and linguistic proficiency.

Implications for Future Research

This study outlines a model that MTL-trained school psychologists could expand upon, generating formative evaluation data from which to refine and individualize the design. As the study is preliminary, results must be viewed with caution. The number of participants was limited. Two teachers trained in the MTL curriculum and their students were matched with two control teachers and their students. Larger teacher and student populations are needed to replicate the findings of this study before conclusions regarding the effects of the MTL-infused curriculum can be generalized. Teachers were not randomly assigned to groups, but volunteered to participate in training, since the intervention was not school-wide. However, experimental and control teachers rated each other as comparable. Cross contamination possibly due to experimental and control classes being held at each participating site, was addressed in two ways: first, teachers delivered the lessons at different times during the same semester; and second, teachers reported compliance with the request that they not discuss the process among themselves due to the possibility of contamination. Last, coaching is a known and effective method of improving teacher performance, and no additional control group received coaching only. Therefore, we cannot say unequivocally that the effects were due solely to the intervention rather than to coaching time given to the experimental teachers.

The absence of information regarding student academic achievement prior to the study constitutes a confounding variable related to student performance. Reliable measures of English proficiency beyond teacher report, and individual standardized or curriculum-based test scores are recommended for future studies to provide baseline measures of achievement which could serve as covariates.

Although a small amount of missing data resulted from student absenteeism, the number of completed tests was adequate to assess treatment effects. The assessment measures included subjective ratings by teachers of language proficiency and, to some extent, of academic performance. We believe this is appropriate to an applied research project in the classroom where teacher–made tests and judgments are the norm. One teacher who was aware of group assignment graded all the tests in order to avoid problems of inter-rater reliability. Since she took primary responsibility for test development, she was selected to score all the measures.

In summary, this study sets the stage for considerable future research. The most salient need is for an expanded version of the current work, in which greater numbers of classes, teachers, and students are involved across each SES group and level of English proficiency. Replication of this study with a larger population is essential in order

to confirm the findings of this preliminary study. If confirmed, this will yield more generalizability. Further, the infusion of MTL into another content area, as well as at different grade levels, would support the possibility that MTL is useful across the curriculum and at various grade levels, rather than just in a specific condition.

In addition, expanded levels of analysis could yield important findings. The impact of targeting each cognitive function chosen could be measured, as well as the interactions between functions. For example, knowing and using comparative behavior effects knowledge and use of seriation and classification. How does each of these individually, as well as the interaction between them, influence acquisition of content? Curricula which target the mediation of different cognitive functions would lead to important comparative data as well. A well-developed analysis of the effectiveness of the teachers' implementation of mediation is an additional researchable variable.

Informal narrative reports from teachers in this study suggested their roles had shifted from disseminators to facilitators of learning, and that they felt more empowered as teachers. Such a paradigm shift is likely to affect educators in important ways. It may affect teachers' sense of self-efficacy with some or all populations; it may shift the allocation of their time. In California, when bilingual education services are greatly restricted by legislative decrees, and where teachers now work with large numbers of children with emerging English skills, this approach to teaching could be especially advantageous. With greater numbers of teachers involved, data could influence teacher retention and teacher education as well as the nature of consultation between school psychologists and teachers.

Finally, our experiences and findings strongly support expanded partnerships between universities and schools. Langer (1990) suggested that if teachers are to help students reason when they read, write, and talk about their coursework, then university-based and teacher researchers must engage with them in collaborative studies to articulate, practice and evaluate such work. Knoff, et al. (1997) have strongly advocated such a move for school psychology, in which university-school partnerships would include shared responsibilities for both development and evaluation. Ysseldyke, et al. (1997) posited that such partnerships would foster a more useful version of psychology in the schools.

Our preliminary findings would support this supposition, and suggest that the systemic effects of expanded and well developed partnerships, specifically to address the development of mediated thinking and learning skills, be examined.

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Making it Work at School and Home: A Need Based Collaborative, Across Settings, Behavioral Intervention

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Children who need behavioral support benefit from programs that offer structure and consistency across settings. This paper examines the behavioral effects of a consistent and collaborative positive behavior support plan between a family and home and school support personnel. In a joint effort, two doctoral students in Special Education developed a comprehensive positive behavior support plan. This plan focused on the individual needs of a 10-year-old boy presenting behavioral problems and diagnosed with mild mental retardation associated with a seizure disorder. One author was the child's school psychologist while the other author was the child's behavior analyst working in the home setting. The case study incorporates needs assessment, functional assessment, and self-management. Implications of an across-settings, collaborative behavioral support program, particularly as they pertain to implementing a similar arrangement in other schools, are discussed.

New models for home-based treatment and support service programs for children with emotional and behavioral disorders emerged in the early 1970s (Clarke, Schaefer, Burchard, & Welkowitz, 1992). These programs were developed initially as an attempt to prevent out-of-home placement for this population. Since their inception, home-based treatment programs have expanded and multiplied into countless formats and support delivery styles. While these support services are diverse, they commonly share three fundamental goals including preserving family integrity, linking families with community services, and strengthening families' ability to cope and function effectively (Clarke et al., 1992). Research regarding home-based support service delivery systems typically use placement outcomes (home versus out-of-home) as the measure of success (Wald, 1988). Other measures, such as relative symptom levels, pre and post service, satisfaction with service, or development of appropriate functioning pre and post service have been ignored in the literature.

Most public school services for children with behavioral and emotional disorders emerged after the passage of PL 94-142 in 1975 (Clarke et al., 1992). A predominant trend has been educating this population in the least restrictive environment (Clarke et al., 1992). Not only has research on the success of public school services primarily focused on academic rather than behavioral outcomes, but these academic outcomes have been ambiguous (Wang & Birch, 1984).

In more recent years, some support services have moved to a comprehensive model, combining these two service delivery models, (home and school), into one inclusive approach (Carlson, 1996; Friesen & Osher, 1996). For instance, Project Wraparound (Clarke et al., 1992) is a service delivery system focused on family centered approaches that include both home and school environments. A premise of Project Wraparound is that "...wrapping individualized services around the child or youth, their family, and the school setting affords the maximum opportunity to provide the most integrated services in the least re-

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strictive environment as possible" (Clarke et al., 1992, p. 245). Service delivery models such as this one have also made an effort to evaluate services using relevant variables beyond placement and academic success (Kalafat, 1996). For instance, Project Wraparound (Clarke et al., 1992) was assessed using several measures including child behavior adjustment at home, parent/child relationship satisfaction, and child behavior adjustment in school.

Integrated approaches to service delivery combined with relevant evaluation of these approaches has contributed to the development of practical, individually based interventions. Comprehensive programs are conceptualized as successful due to their ability to be consistent across environments and collaborative among service providers. Individualized service delivery builds on consistency and collaboration by taking into account individual needs and "goodness of fit" (Albin, Lucyshyn, Horner, & Flannery, 1996) of an intervention plan with an individual's value system, and goals.

Realistically, the prospect of creating a collaborative, across settings, need based intervention for one student is likely overwhelming for individual service providers such as school psychologists. Often times, service providers are unaware of other services available to families. In addition, they may lack contact with community supports agencies, funding to coordinate large scale or comprehensive support plans, and time to arrange and coordinate meetings with other service providers. The goal of this case study was to provide an example of a realistic behavioral intervention that was not only need based and collaborative across settings, but was easy to implement and low cost.

The current study focused on a specific service delivery need in which the participant was an individual with multiple disabilities including mild mental retardation, a seizure disorder, and behavioral problems. This is not an unusual configuration of presenting need as it is estimated that approximately 30% of children with mental retardation who receive services are referred specifically for behavior problems (Benson, 1985). In this study, the researchers implemented a support plan that incorporated (a) consistency across environments, (b) collaboration among support staff, family, and school, (c) needs based assessment, (d) functional assessment, (e) self-management intervention, and (f) goodness of fit. Evaluation of service was measured by child behavior changes in both home and school settings, parent satisfaction with service and teacher satisfaction with service.

METHOD

Participant

The participant was a 10-year, 4-month-old Hispanic boy diagnosed with mild mental retardation and a seizure disorder. He was referred to a behavioral service vendor for behavioral intervention by the local regional center. A regional center is a state funded service coordination agency that provides or coordinates services for individuals with developmental disabilities (California Department of Developmental Services, 2000). All counties in California are served by a regional center.

The participant lived with his parents and six siblings in a southern California suburb. His father worked in another city and consequently, was in the home only on weekends and holidays. The participants mother was a full-time mom who stayed at home each day. The participant attended a local public elementary school. He was in a fifth-grade special day class (learning center) where he spent the majority of his time.

The participant was able to read approximately 120 sight words, was able to count by rote to 30, and was able to write his own name. He did not know his address, phone number, nor could he identify the days of the week. He presented positive social skills including eye contact and initiation with adults, peers, and siblings. His speech, however, was often unintelligible due to a lack of enunciation.

The participant had a history of severe behavior problems both at home and at school. In

the home, he had a history of fighting with his siblings, tantrums, noncompliance and toilet training difficulty beginning in the fall of 1998. The participant had an increase in seizure episodes at that time, which coincided with the appearance of new behavior problems including tantrums and bathroom accidents and an increase in previous problem behaviors including noncompliance and fighting with his siblings.

In the school setting, problems arose at approximately the same time. In the fall of 1998 the school psychologist wrote to a neurologist, concerning the participant's increased mood swings, incontinence, seizures, and behavioral problems. The neurologist prescribed Depakote to address the child's seizures. Behavior problems identified in the school setting included hitting staff and other students, as well as throwing objects including chairs and rocks at staff and classmates.

Settings

Settings included both the home and school environment. In the home setting, observations and behavioral interventions took place in his bedroom, kitchen, living room, and outdoor areas. In the school setting, observations and behavioral interventions took place in the special day class and on the play ground.

Materials

Materials for implementing the behavior plan included a clear plastic jar with a screw-on lid that was labeled with the participant's name. The participant kept nickels that he earned as reinforcers in this jar. Other materials included small index cards that were used to record appropriate at-school behaviors and were then taken home with the participant each day to collect rewards. These cards had spaces on them where stickers were placed if the participant exhibited appropriate behaviors during 60-minute time increments at school. The classroom teacher prompted the participant to verbalize whether or not he had behaved appropriately during the previous 60 minutes. If the student reported that he had behaved appropriately and the teacher agreed with this report then the student chose a sticker and placed it on his self-management chart.

Design

This study used single-subject design (concurrent, multiple baseline across two behaviors) (Barlow & Hersen, 1984). The researchers targeted the two problematic classes of behavior described by parents and school staff. These behaviors were tantrums and incontinence. They were defined as (a) *tantrum behavior*: the participant exhibiting any of the following behaviors alone or in combination; hitting, kicking, throwing objects or yelling; and (b) *incontinence*: the participant having either a urinary or bowel accident during the day. Dependant variables measured were (a) the number of tantrums per day, (b) the number of incontinence episodes per day, (c) parental satisfaction, and (d) teacher satisfaction.

Data Collection

The researchers collected data using direct observations, informant methods, and functional analysis. The school psychologist observed the participant in the school setting and the behavior analyst observed the participant in the home setting. During observations, event recording was used to record the participant's tantrum behaviors and incontinence. Methods of data collection included reviewing the students' cumulative files at both school and the regional center, interviewing parents, teachers, and support staff, and observations in the home and school setting.

Cumulative files were reviewed to assess previous behavior issues and interventions. Interviews of the family, teachers, and support staff focused on the participant's behavior and the specific needs of behavior support plans in the home and school settings. Interviews with the teacher and school staff were conducted in English. Interviews with the family were conducted in both English and Spanish. Additionally, data were collected in the home environment through a researcher's daily phone calls to the participant's

mother. Functional analysis was used to determine the purpose of the participant's behavior and to develop an appropriate behavioral support plan.

Procedure

Baseline. Baseline data was collected for a 10-day period in both home and school settings. The researchers were the participant's behavior analyst assigned through the local regional center's behavioral treatment vendor and the school psychologist practicum student assigned through the participant's school district. During baseline, data were collected for tantrum behavior and incontinence in both home and school environments. Data were reported using event recording based on direct observations, cumulative file review, and informant methods including interviews over the phone and in person with parents, school teachers, and support personnel.

A functional analysis of both tantrum behavior and incontinence was completed based on data collected during baseline using direct observation and informant methods. The functional analysis was then used to develop a behavioral support plan for the participant. Care was taken in the development of the plan to consider the needs of the participant, his family, and his school. The functional analysis was accomplished through collaborating with key people in the participant's daily life including the participant, his parents, and school staff.

Intervention. The intervention consisted of parent and teacher training and the utilization of self-management techniques. Training took place primarily in English which, although Spanish was spoken in the home, was the language of choice of the parents and teacher. Training focused on proactive and reactive strategies for supporting the participant's appropriate behavior. The teacher and parent consulted with each other as needed during the daily drop-off and pick-up times of the participant. These brief meetings provided an informal opportunity for the parent and teacher to discuss the participant's behavioral progress.

Self-management procedures involved the introduction of a token economy system (Jenkins & Gorrafa, 1974) in which the parents administered the participant's regular allowance (1 dollar per day) in nickels, contingent upon the participant's request of a reinforcer for his own appropriate behavior. The participant requested his reinforcers (nickels if at home and stickers if at school which would be traded for nickels once home) from a supervising adult, parent or teacher, approximately every 60 minutes if he had not exhibited tantrums or incontinence. The participant was taught, through modeling and discrimination training by a researcher, how and when to request reinforcement. He was taught to discriminate "appropriate" from "inappropriate" behaviors. Replacement behaviors including appropriate bathroom use, requesting a break at school, and telling a supervising adult if he was frustrated or angry with a peer or sibling were taught by a researcher using modeling and discrimination training.

At the same time, the participant's parents were taught proactive strategies to promote appropriate behavior and reactive strategies for those times when an inappropriate behavior occurred. *Proactive strategies* taught to the parents included (a) dispensing rewards (nickels) and verbal praise in a consistent way when their child behaved appropriately, (b) using positive language and affect consistently with their son when rewarding him, and (c) modeling appropriate replacement behaviors for their son. *Reactive strategies* taught to the parents included: (a) ignoring minor inappropriate behaviors; (b) withholding reinforcement, preferred items, or activities; and (c) refraining from giving affection and attention during and immediately after inappropriate behaviors occurred. These strategies were introduced to the family on the first day of treatment and monitored and encouraged through daily phone conversations between the participant's mother and a researcher.

Self-management and teacher training were introduced in the school environment subsequently

on the following Monday morning. In the school environment, the student's appropriate behaviors were reinforced using stickers that the participant could later trade for nickels once at home. A researcher monitored the implementation of the treatment in the school environment by making weekly classroom visits observing the participant across school settings (classroom, lunch time, recess) and through bi-weekly telephone conversations with the classroom teacher and teaching assistants. Follow-up observations were conducted in the same manner across settings at two and three months post-intervention.

RESULTS

Baseline

In the home environment, the participant exhibited an average of 4 incontinence episodes per day ($M = 4.1$, $SD = 1.5$) and an average of 2 tantrums per day ($M = 2.0$, $SD = 1.1$). In the school environment, the participant exhibited an average of 2 incontinence episodes per day ($M = 2.0$, $SD = 1.1$) and an average of 0.2 tantrums per day ($M = 0.2$, $SD = 0.9$). That is, at school the participant had 1 tantrum per week during the 10-day baseline period.

Needs based assessment. During interviews with the mother of the participant, specific needs of the family were recorded. Based on the mother's uneasiness with in-person visits, her reading and writing difficulties, her linguistic background in Spanish, in addition to the family's extreme stress, a variety of accommodations were made including: (a) contact with the mother was maintained through telephone conversations, (b) explanations and instructions were given verbally, (c) a Spanish speaking researcher was available to facilitate communication, and (d) daily support and self-management with the student was chosen over standard parent training. In the school environment, individual needs recorded included: (a) the need to use stickers rather than money as reinforcement due to concerns regarding possible theft of the coins, (b) time constraints in the classroom, and (c) the need to continue current behavioral interventions already in place in the school including a separate sticker chart for appropriate toilet use.

Functional analysis: Tantrum behavior. Observed tantrum behaviors were directed at either a supervising adult, sibling, or peer. Antecedents to the participants tantrums at home included: (a) having a preferred activity terminated, (b) having a preferred item taken away, and (c) being asked to participate in an undesirable activity or task. In the school environment two additional antecedents were noted: (a) an argument instigated by a peer (teasing), and (b) having a work task interrupted. Tantrum behaviors demonstrated by the participant typically included yelling, hitting, and kicking. In the school environment the participant also exhibited throwing objects including chairs and rocks at other people.

Prior to treatment, consequences to these tantrum behaviors were: (a) verbal reprimands of "no," (b) repeated verbal commands, (c) verbal explanations as to why something was taken away or why he was asked to do something, (d) escalating arguments with siblings comprised of loud voices and physical fighting including hitting and kicking, and (e) being sent home from school. The participant's tantrum behavior was hypothesized to serve several purposes: (a) to express anger over being told to stop doing something, (b) to express anger over being told to start doing something new, or (c) as a means of avoiding an undesirable activity or task.

Functional analysis: Incontinence. The participant was able to stay dry for over three hours at a time during the day at baseline. At home, an antecedent to the participant's accidents was being involved in a preferred activity such as a video game, TV, or outdoor play. The participant's accidents occurred several times a day. The primary consequence of this behavior was his ongoing participation in the preferred activity. The participant was largely ignored by others when this behavior occurred. When the participant had an accident, he waited until the preferred activity was finished

and then changed his clothes himself. The participant consistently left his soiled clothing at the location where he had his accident. Accordingly, his mother cleaned up each mess without interacting with the participant. She usually found a pile of clothes on the floor after the participant had moved on to another activity. In the school environment the participant was asked to go to the bathroom and given a change of clothes when it was noticed that he had had an accident. The participant's incontinent behavior was hypothesized to be a function of his unwillingness to stop or interrupt participating in a preferred activity in order to use the bathroom appropriately.

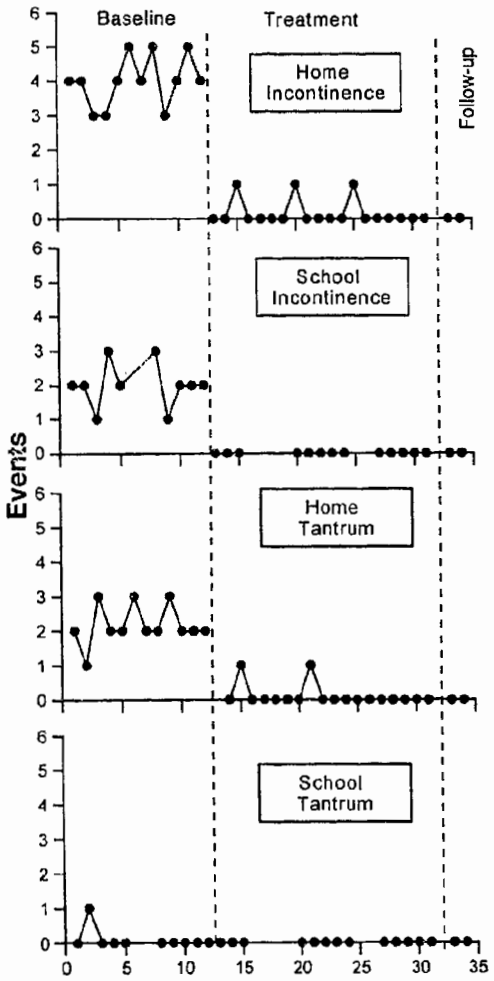

Figure 1. **Events of tantrum and incontinent behaviors recorded daily in both home and school settings. Breaks in the data for at school behaviors exist because of weekends, holidays, and sick days when the participant was not at school.**

Intervention

Data were collected beginning on the first day that treatment was introduced. The following is a summary of data collected during the first three weeks of intervention. It should be noted that treatment took place in the home for 21 consecutive days and in the school for 13 nonconsecutive school days due to weekends, holidays, and illness.

Home incontinence. In the home environment, the participant exhibited a large decrease in incontinent behavior with an average of 0.1 episodes per day (M = 0.1, SD = 0.4). That is, the participant had a total of 3 accidents in the home environment during the three weeks following treatment. Two of these accidents were explained by the parents to be out of the participant's control. For example, the participant had informed his parents while out in the community that he needed to use the restroom. The parents were unable to find a restroom in time and the participant had an accident. In another instance, the participant was being tickled by his father and had an accident. The third incontinent episode was not explained by other variables. In this case, the participant was playing outside and failed to come inside to use the bathroom appropriately.

Home tantrum behavior. Tantrum behaviors also decreased substantially in the home environment during the first three weeks of treatment. The participant exhibited an average of 0.1 tantrums per day after treatment (M = 0.1, SD = 0.3) in the home environment. That is, the participant exhibited two tantrums in the 21-day period following treatment implementation in the home environment. Both episodes occurred in the morning before school and were interpreted as attempts to avoid going to school.

School incontinence. During the three weeks of treatment in the school, the participant's incontinence stopped completely.

School tantrum behavior. Tantrum behavior decreased to 0.1 episodes per day ($M = 0.1$, $SD = 0.4$). That is, the participant had 2 episodes of tantrum behavior during the 13-days of intervention in the school. The participant's teacher explained that the tantrums were much less severe in nature and shorter in duration than pretreatment tantrums.

Follow-up

Follow-up probes were taken in both home and school environments for both incontinence and tantrum behaviors at two and three months post-intervention. No inappropriate tantrum or bathroom behaviors were observed or reported in either environment during these observations.

Parent and Teacher Satisfaction

A satisfaction survey was given to the parents and teacher at three months post intervention (Table 1). Both parents and the participant's teacher reported positive satisfaction with the intervention. They agreed that the collaborative nature of the intervention improved its effectiveness and would recommend using a similar intervention to other service providers. The participant's teacher commented, "Having a home/school connection was instrumental in changing [the participant's] behaviors" (interview data).

DISCUSSION

Previous research documents the effectiveness of home-based behavioral support plans (Koegel, Koegel, Kellegrew, & Mullen, 1996; Singer, Irvine, & Irvin, 1989) as well as school-based behavioral support plans (Anderson, Russon, Dunlap, & Albin, 1996; Reichle et al., 1996). There is a paucity of literature, however, examining collaborative positive behavioral support plans across home and school settings that report behavioral improvement as a measure of success.

One purpose of this case study was to evaluate a collaborative behavioral support plan using relevant behavioral measurements. This study documents the effectiveness of collaboration between behavioral intervention specialists across home and school settings in decreasing problematic behaviors across environments. Parents, teachers, school psychologists and administrators may consider advocating for this kind of collaboration between home and school.

This case study was successful for several reasons. First, the tailoring of the intervention to the needs of the family and school enabled a successful outcome. Taking into account the cultural and linguistic variables were an inseparable part of this individual needs assessment and contributed to the success of the intervention. For example, although the family chose to work primarily in English, having a bilingual English/Spanish researcher available to translate the behavior

Table 1
Satisfaction Survey Questions and Answers

	Mother	Teacher
How satisfied were you with this program?*	7	7
Was the intervention effective? *	7	7
Would you recommend this intervention to someone else?	yes	yes
Did the program take into account the needs of (your family/ your school)?	yes	yes
Do you feel that the participant enjoyed participating in this intervention?	yes	yes
Do you feel that the collaborative nature of this intervention (between home and school) improved its effectiveness?	yes	yes

*Rated on a scale with anchors of 1 = "not at all" and 7 = "extremely"

plan facilitated communication between the family, school, and support staff. In addition, the support personnel implementing the behavior support plan were properly trained in understanding problem behavior and designing support interventions. Finally, this intervention was successful because of the continuity and collaboration across settings and supports.

Successful implementation of similar interventions will depend on these strengths. Positive behavioral support programs must begin with an assessment of the child that includes not only school-based assessments, but family-based assessments as well. Identifying and understanding family characteristics, values, and goals is of utmost importance (Albin et al., 1996). For example, in the current study, the researchers paid special attention to the needs of the family. This participant had six siblings at home and his mother's time was limited. Rather than intrude on the family by making daily visits to the home, the home-based behavior analyst made less time-consuming daily phone calls to the participant's mother to monitor program implementation.

Additionally, positive behavioral support interventionists must be sensitive to the family's cultural and linguistic background and how such factors might influence potential positive behavioral support programs. For example, in the current study, researchers were sensitive to the family's language background (Spanish) and offered the family behavioral support services in Spanish, albeit this particular family chose to receive services primarily in English with some Spanish translation.

Consistency of intervention across settings is also important for success. The current case study intervention overlapped between the school and home settings. For instance, the participant earned stickers at school for appropriate behaviors which were exchanged for nickels at home. This exchange, bringing data from school to home, created a bridge between the support plan in one setting to the other.

While this intervention was successful, there are many complexities involved for school psychologists implementing such an assessment and intervention program in home and school settings. For instance, proper training in behavioral assessment and implementation is often lacking. Considering limited resources, schools often depend on the school psychologist or teacher to develop positive behavioral support programs. Teachers, school psychologists, and other school personnel must, therefore, receive appropriate training in behavioral support.

Other potential complexities that must be considered by school psychologists implementing a school and home based intervention include time constraints, location of services, and communication across settings. The collaborative nature of this intervention which enlisted the assistance of community based support personnel through the local regional center helped to alleviate these complexities. Combining the services from the traditionally separated worlds of home and school support services lessened the work load of each service provider. In the city where this study took place, home-based behavioral support programs are generally funded by the local regional center, while school-based programs are funded by the school districts. Pooling of these often separated resources contributed greatly to the success of this intervention. As increasing demands are placed on school psychologists, teachers, and support staff to implement comprehensive support plans, creating collaborative links to resources in the community makes good sense. To gain these collaborative supports, school psychologists can familiarize themselves with community based agencies that provide services in the home setting.

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Development of a School District Crisis Intervention Policy

Stephen E. Brock
Lodi Unified School District

This article presents a qualitative case study of efforts to initiate, implement, and continue a school district crisis intervention policy. As viewed by a participant observer, a description of the change environment and barriers to this school change effort are presented. Policy developer actions and other factors that helped to overcome barriers are discussed. Among the important lessons learned was that a truly necessary school change (such as a crisis intervention policy) will eventually come to be viewed as essential by the school community. Planners should anticipate this and be prepared to respond quickly when the time is right.

According to Fullan (1991), the primary purposes of schools are to facilitate "cognitive/academic" and "personal/social-development" (p. 14). Crisis events have the potential to interfere with both of these goals. Initially the acute distress generated by an apparently unsolvable problem will adversely affect cognitive functioning. Consequently, students will be unavailable for new learning. Perhaps more importantly, however, failure to resolve a crisis can literally close down areas of personal and social life. Slaikeu (1984) states that those individuals who fail to resolve a crisis "withdraw from relationships, are unable to work, [and] have difficulty in finding enjoyment in life. . ." (p. 23). On the other hand, according to Caplin (1964), successful crisis resolution is seen as resulting in changes ". . . toward increased health and maturity" (p. 36). Given these observations it is argued that schools be prepared to help students cope with crises. The development of a crisis intervention policy is key to such preparedness (Wong, 2000).

While most educators are concerned about school crises, relatively few have initiated district-wide policy addressing such circumstances (Palmo, Langlois, & Bender, 1988). Yet, according to Cultice (1992), "A written crisis intervention policy . . . is essential" (p. 70). Having a policy is useful, because it focuses attention on the problem of crisis preparedness. Additionally, the process of policy development leads to careful planning and thought about local needs (Brock, Sandoval, & Lewis, in press).

An effective policy statement documents staff members' responsibilities and affirms the district's intention to prepare for traumatic events. It is a document that can be shared with the public and used to hold the district accountable. However, it is not enough to just adopt a policy. It must be implemented. To do so a school district must not only commit itself to crisis preparedness, it must also acquire and disseminate the knowledge needed to carry out crisis intervention. In addition, the district must allocate the time and resources needed for such training. While preparedness tasks do not cost much more than staff time, budgeting for such planning-time is critical (Brock et al., in press).

In this article, a specific example of how one school district established a crisis intervention policy will be reviewed. It is hoped that this example will help to guide other districts interested

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in institutionalizing school crisis intervention. The paper is divided into two parts. The first provides a description of the environment within which the policy was developed. It describes the school district's setting, participants, and participant attitudes. In the second part, from the author's experiences, a description of efforts to initiate, implement, and continue the policy will be described.

The crisis intervention policy that is the focus of this paper is provided in Table 1. As can be seen, this policy has two complementary purposes. First, it was designed to facilitate development of crisis intervention teams and plans within all District schools. Second, it was designed to ensure that crisis intervention support would be made available following crises. School principals were the focus of this change effort. Through their leadership, it was hoped that the intent of the policy would be realized.

THE CHANGE ENVIRONMENT

Policy Development Setting

This policy was initiated and implemented in the Lodi Unified School District (LUSD). Located in a rapidly growing area of California's San Joaquin Valley, LUSD is a K-12 district with an ethnically diverse student population. A significant challenge that this change effort had to confront was rapid growth. School enrollment had risen from 14,857 students in 1980 to 22,791 at the time of policy adoption (November 1989). Because of this rapid growth, LUSD was forced to become one of the largest districts in the state to adopt a year round calendar. On the other hand, at the time of policy initiation, LUSD was financially healthy. Enrollment increases, year round school resources, and a healthy economy combined to make financial issues a minor concern. Thus, while emotionally drained by the changes forced upon it by rapid growth, LUSD was financially able to support additional change efforts.

Policy Developers

This policy was primarily developed by a group of LUSD school psychologists. Traditional LUSD psychologist responsibilities include assessment, consultation, and counseling. These individuals were (and still are) part of a certificated bargaining group and are not considered a part of District management. Thus, they were not typically viewed as policy developers.

At the time of policy initiation, this group of psychologists was given little school change authority. Thus, the process described in this paper might be considered a "bottom-up" or "grass roots" effort. In other words, this policy was realized after a group with relatively little perceived control successively enlisted the aid and support, first of their colleagues, then of administrators, and finally the Governing Board. With policy adoption, however, implementation was a "top-down" process as the policy statement (Table 1) mandated school administration prepare for crises.

POLICY MAKERS

While theoretically anyone can propose a policy, the actual power to set it rests in the hands of the Governing Board and to a somewhat lesser extent with its representative the Superintendent. Thus, a primary goal of policy initiation was to establish a base of support capable of influencing these individuals. At the time of policy initiation, the LUSD Governing Board was considered progressive. For example, it had replaced a conservative, home grown, popular, retiring superintendent, with a progressive innovator from another school district. Immediately, upon his employment he oversaw the implementation of a year round calendar and instituted numerous curriculum changes. In addition, he had directed significant changes in the District's administrative structure. Thus, while the rank and file LUSD employee may not have been expected to be supportive of new change efforts (because of rapid growth and numerous other changes), the Governing Board and its Superintendent were certainly no strangers to change efforts.

While the Governing Board and Superintendent were comfortable with the concept of school change, many barriers needed to be overcome before the policy developers could expect to achieve

Table 1
Lodi Unified School District: Governing Board Policy 5141.5

Administrative Response to Crisis Situations (Adopted November, 1989)
The Governing Board recognizes the need to provide support to students in the event of a crisis. A crisis is defined as a traumatic event that affects the health, safety, or social-emotional well being of students. It is the intent of the Governing Board that the Administration shall develop procedures to assist students in these instances. It is the policy of the Governing Board that the District have a plan in place for the provision of immediate counseling and crisis management, as well as for follow-up support.

Rules for a Board Policy 5141.5: Administrative Response to Crisis Situations
- At least annually, school administration will review *Administrative Guidelines for Crisis Intervention* with school staff members.
- A current copy of the crisis preparedness checklist (from the *Administrative Guidelines for Crisis Intervention)* must be on file in the Superintendent's office by October 1 of each school year.
- Once a crisis situation has stabilized, school administration will make efforts to determine facts surrounding the crisis, assess degree of impact on the school, and begin to determine the level of response required.
- The Superintendent's office must be notified immediately following a crisis that occurs at school. District Crisis Intervention Team assistance (if needed) may be requested by contacting the Lead Psychologist.
- Following a crisis, school administration shall implement procedures for crisis intervention as specified in the *Administrative Guidelines for Crisis Intervention.*

Note. The *Administrative Guidelines* referred to in these "rules" were developed to give principals further direction on how to implement the proposed crisis intervention policy, as well as to provide suggestions regarding how to intervene during times of crisis. A crisis planning checklist was a part of these guidelines (see Table 6). Primarily this checklist specifies the crisis intervention responsibilities of staff members.

their support. The policy developers could not expect them to support a plan that was not embraced by staff; especially given the fact that they were already under pressure related to their own change projects.

DISTRICT ATTITUDE TOWARD CHANGE

As has just been mentioned, the Governing Board and its Superintendent were considered school change advocates. However, as has also been mentioned, all other District employees did not necessarily share this view. The combined effects of rapid growth, a year round calendar, and a new innovative superintendent had taken its toll. The number of changes faced by LUSD personnel had generated a high degree of cynicism toward additional change efforts. Principals were especially hard hit by the number and enormity of the District's changes. They were, for example, at this time only beginning to face the realities of year round schooling. With the implementation of this calendar, they found themselves constantly engaged in the day-to-day operations of running a school. Consequently, they had very little planning time and any new change was viewed more critically. The principals' attitudes toward change were particularly problematic. Principals were to be the focus of the proposed policy. It was through their leadership that the policy developers hoped to achieve policy goals.

As if the above attitudes toward change were not enough, another factor had the potential to add resistance to this particular change effort. Because crises are such an unpleasant reality, there is a natural tendency for people to avoid thinking about them (let alone planning for them). Furthermore, crises represent one of the most dramatic forms of change. Crises are life-altering events. Following a crisis, one's life is never truly the same. Thus, for a District already reeling from numerous change efforts, the concept of preparing for a crisis would be doubly hard. Doing so would involve an acknowledgment that more change is coming.

Table 2
Samples of Crisis Intervention Education Resources

Professional Literature Resources

• **Aguilera, D. C. (1998). *Crisis intervention: Theory and methodology* (8th ed.). St. Louis, MO: Mosby.**
Now in its eighth edition, this book is one of the crisis intervention "classics." It is well written, pragmatic, and a must for any practitioner. Although somewhat medically and adult oriented, its longevity speaks to its usefulness. It is one of the most often cited works on crisis intervention.

• **Poland, S., & McCormick, J. S. (1999). *Coping with crisis: Lessons learned.* Longmont, CO: Sopris West.**
Intended by its authors to be a "quick read," this volume focuses on the immediate school response to violence-related crises. This is an applied work that includes a number of real life school crisis response examples, as well as two expanded case studies. It also includes chapters on suicide and long term crisis interventions.

• **Sandoval, J. (Ed.). (in press). *Crisis counseling, intervention, and prevention in the schools* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.**
This is an edited volume covering a variety of crises (e.g., divorce, abuse, death, and suicide). Written for the school-based practitioner, this work not only looks at crisis intervention, it also addresses the issue of how to prevent and/or prepare for predictable crises.

Internet Resources

• **National Center for PTSD (http://www.dartmouth.edu/dms/ptsd)**
This web site provides information on a broad range of research and training programs. A helpful document found within this site is "Information About PTSD." In addition, found on its "Fact Sheets" page are the following: "PTSD in Children," "Survivors of Natural Disasters" and "PTSD and the Family." With Acrobat™ Reader, viewers can download a PDF file titled "Disaster Mental Health Services: A Guidebook for Clinicians and Administrators." This document addresses the reactions of survivors; how to help survivors, and mental health team and program development.

• **Federal Emergency Management Agency (http://www.fema.gov)**
By accessing this site's Virtual Library and Electronic Reading Room viewers can browse the *FEMA for Kids* room, which contains disaster preparedness activities, curriculums, and games for children. In addition, it includes a mental health checklist and a discussion of how to help child victims. With Acrobat™ Reader, viewers can download a PDF file titled "How to Help Children After a Disaster: A Guidebook for Teachers." The *Preparedness, Training, and Exercise* room includes an emergency preparedness checklist and a disaster supply kit list. It also includes suggestions for how to prepare for and respond to a variety of specific crisis events (e.g., nuclear disaster, hazardous materials, wildfires, hurricanes, landslides, mud flows, flood and flash floods, fire, extreme heat, earthquakes, thunderstorms and lightening, tornadoes, tsunamis, volcanoes and terrorism).

• **American Psychiatric Association (http://www.psych.org)**
This site has a link to a "Disaster Preparedness" page. This page is designed to provide information useful for preparing for and responding to disasters. Found on the "Public Information" page are a variety of handouts addressing mental health issues. "Fact Sheets" of particular interest to crisis intervention planners include "When Disaster Strikes" and "Teen Suicide."

Professional Development Training Program Resources

• Basic and Advanced Critical Incident Stress Management
The two-day Basic *Critical Incident Stress Management* (CISM) course prepares participants to provide crisis intervention services. Topics covered include post-trauma syndromes and special (or difficult) crisis intervention issues. For information on a training near you contact: International Critical Incident Stress Foundation, Inc., 10176 Baltimore National Pike, Unit 201, Ellicott City, MD 21042.

Table 2 continued

• National Community Crisis Response Team Regional Training Institute
The five-day *National Community Crisis Response Training* provides comprehensive training in crisis intervention. Topics covered during day one include acute and chronic stress reactions. Day two reviews the topic of death and dying. Day three introduces participants to a model of individual and group crisis intervention. Days four and five provide further review and practice of crisis intervention skills. This is an ideal training for a local team to attend together and can help to ensure a common level of crisis intervention skill. For information about this training program contact: National Organization for Victim Assistance®, 1757 Park Road, N. W., Washington, DC 20010.

Note. Adapted from Brock et al. (in press). Copyright John Wiley & Sons.

The policy developers suspected that the popular attitudes toward change, especially among school principals, could present an obstacle. So much was already changing in the District that new change not only had to overcome these attitudes, but also had to compete with numerous other change efforts for the attention of the policy setters. Nevertheless, there was resilient belief in the policy's importance. Thus, the policy developers continued their work. Over the period of one-year (the 1987/88 academic year) basic ideas about crisis preparedness were developed and in September 1988, a group of interested individuals formed a planning committee. Then on the very day of a planning committee meeting, a disaster of unimaginable proportions happened. A disaster that made the need for crisis preparedness readily apparent to all District personnel. A disaster which easily overcame existing attitudes toward change.

The Cleveland School shooting was an incident that will never be forgotten in San Joaquin County. On January 17, 1989, an intruder began shooting at a crowded primary playground with an AK-47 assault rifle. When the shooting stopped five children had been killed. Thirty others had been wounded (Cox & Grieve, 1989). The trauma and horror felt by this school was readily apparent to the entire community. The effect was particularly strong in LUSD as it shares a boundary line with Cleveland Elementary's School District. The fact that such a tragedy could happen in its very own backyard completely destroyed resistance toward the changes called for by the crisis intervention policy proposal. It gave policy developers the support they needed to approach the Superintendent and, eventually, the Governing Board.

Initiation, Implementation, and Continuation of the Policy[1]

Although the Cleveland schoolyard shooting had a profound influence on the course of the proposed policy, it is important to acknowledge that a significant amount of preparation had taken place before it occurred. During the year and one-half before the shooting, there was a clear sequence of steps followed by policy developers. These steps placed them in a position to take advantage of the perceived need for crisis preparedness generated by this tragedy.

STEPS IN INITIATION OF THE CRISIS INTERVENTION POLICY

Getting started. Long before the shooting, the policy developers had taken their first steps, which involved obtaining knowledge about crisis theory and crisis intervention. Sources of such knowledge can be found in the professional literature, the Internet, and professional development training programs (Brock et al., in press). Samples of these resources are provided in Table 2.

Next, with a clear understanding of what they were proposing, the second step was to commit to crisis preparedness by establishing it as a professional growth objective. This step served two purposes. First, it provided motivation to complete crisis planning. Second, it served to involve the

immediate supervisor. By accepting it as one of the objectives used during the evaluation process, the policy developers' supervisor gave crisis preparedness his tacit approval.

Crisis Intervention Planning Committee. After having committed to crisis planning and having obtained a degree of administrative support, the third step was for the policy developers to broaden the base of their support. Because this was a grass roots change effort, it was important that as many staff members as possible be involved in, and supportive of the change effort. Thus, the policy developers wrote a memo expressing their interest in crisis intervention preparedness and invited others to join them in this process. The memo was sent to all district support staff (whose mental health backgrounds would be essential to crisis interventions) and administrators (whose leadership would be essential to the implementation of a crisis intervention policy). It resulted in the formation of a Crisis Intervention Planning Committee (CIPC). Once established, the CIPC included psychologists, counselors, other support staff, and administrators. It was within this committee that the policy statement (Table 1) and guidelines for crisis planning and intervention were developed.

A review of CIPC meeting minutes finds that there was initially a surprising amount of interest in the committee. However, CIPC activities before the Cleveland schoolyard shooting paled in comparison to activities following the shooting. What had been a Committee focused on planning was suddenly looked to for crisis intervention leadership. Fortunately, because of the time taken to develop necessary background knowledge (provided by resources such as those listed in Table 2), the policy developers were prepared to fill this leadership role.

Staff development. In response to the need for crisis intervention leadership, the policy developers assessed the District's crisis intervention in-service training needs and then made available such training to all support staff. There were several reasons why staff development was an initial response to the call for crisis intervention leadership. First and most importantly, there was a realization that crises were not going to wait for the development of a comprehensive plan. Thus, it was judged important to increase the skill level of those who would be on the front lines of a crisis intervention as soon as possible. Second, recognizing that there was an unusually high level of interest in crisis intervention, this was seen as an opportunity to add to the cadre of employees knowledgeable about crisis intervention. Finally, looking toward the implementation of the policy, it was recognized that this would be difficult if staff members did not have a clear understanding of crisis intervention principles. Once completed, this in-service training added to the support for crisis preparedness generated by the Cleveland schoolyard shooting. It was at this time that the policy developers judged they were in a position to approach District administration with their proposals.

District-level administrative support. As Fullan (1991) mentions "innovation never occurs without an advocate, and one of the most powerful is the chief district administrator . . ." (p. 54). Thus, with the support of immediate supervisors, interested administrators and peers established, the fourth step was to approach the superintendent regarding the desire to establish a crisis intervention policy. As has previously been mentioned, this Superintendent was progressive. Thus, given the broad base of support, it was not surprising that he was receptive to the proposal.

To facilitate policy implementation the policy developers asked for and received token financial support ($2,000). In retrospect the author suspects that the policy could have been initiated and implemented without financial assistance. However, not only did such support facilitate the crisis intervention policy, but it also reinforced the district's commitment to this change effort.

Site-level administrative support. The fifth step was to approach site-level administrators and further solicit their support. As they had primary responsibility for the implementation of the policy,

it was important for principals to have an opportunity to review and comment on it before adoption. The rules (provided in Table I), which specified their responsibilities relative to the policy statement, were also reviewed with all building administrators.

It is important to mention that before this step some principal input had already been solicited. In addition to those principals who served on the CIPC, several other influential site-administrators were asked to review the policy proposal and the accompanying *Administrative Guidelines for Crisis Intervention* (Brock, Lewis, Slauson, & Yund, 1989). Their comments were integrated into the final product. For example, from principal input, checklists were used to summarize the *Administrative Guidelines*. The authors were told that because principals were so busy with the day-to-day operations of running year round schools, they would be unlikely to read a long procedural manual. They required a document that they could refer to and review quickly.

Because the Cleveland schoolyard shooting was still a relatively recent occurrence, the anticipated resistance to change was not seen. At this moment in time crisis preparedness was a change that principals felt was important and needed. According to Fullan's (1991) "three R's" of consideration in planning for adoption of a school change, the principals saw the proposed policy as *relevant*, they were *ready* to adopt it, and the policy developers provided the needed *resources*.

Governing Board support. Once district administrators indicated their support for crisis pre-

Table 3
Outline of Training for Trainers Workshop Presentation

REVIEW THE SCHOOL BOARD CRISIS INTERVENTION POLICY

REVIEW CRISIS THEORY
- Discuss the different "types" of crises (i.e., developmental and situational).
- Discuss aspects of the "crisis state" (i.e., inability to cope, extreme distress, potential for radically positive or negative outcomes, more than stress, not mental illness).
- Discuss the principals of crisis intervention (e.g., reestablish immediate coping).

DISCUSS DEVELOPMENT OF SCHOOL CRISIS INTERVENTION TEAMS
- Review implementation recommendations (see Table 4).
- Completing the Crisis Planning Checklist (see Table 6).

DISCUSS CRISIS INTERVENTION TEAM MEMBERSHIP
- Identify specific team roles (e.g., crisis intervention coordinator, security liaison, media liaison, medical liaison) and responsibilities.

THE CRISIS INTERVENTION IN-SERVICE MODEL
- Discuss how to help individual schools develop a crisis intervention plan (see Table 5).

THE CRISIS TEAM IN ACTION
- Discuss how to use the Procedural Checklist (see Brock et al., in press).

TABLE TOP CRISIS INTERVENTION DRILL
- Use the Procedural Checklist to respond to crisis scenarios (see Brock et al., in press).

Note. Adapted from Brock et al. (in press). Copyright John Wiley & Sons.

Table 4
Recommendations for the Implementation of Board Policy 5141.5: Administrative Response to a Crisis Situation

The following steps are offered as suggestions for how to implement Board Policy 5141.5.

1. The school principal, counselor(s), and psychologist meet and review *Administrative Guidelines for Crisis Intervention*, consider the recommendations that follow, and develop a policy implementation calendar.
2. The psychologist and counselor should present a brief one- to two-hour in-service to all staff members (classified as well as certificated) introducing the concept of crisis intervention in the schools.
3. Following this in-service, invite staff participation in the development of a site crisis intervention plan, and conduct a needs assessment to determine crisis intervention issues that may require additional staff development.
4. Form a committee of all interested staff members to develop a site crisis intervention plan. This committee should include the principal, vice-principal(s), school psychologist, school counselor(s), and school secretary.
5. The committee should review and discuss the Crisis Intervention Policy, Rules, and *Administrative Guidelines*. It then develops the site crisis intervention plan. This plan will require completion of the Planning Checklist from *Administrative Guidelines for Crisis Intervention* (as specified in rule 5141.5).
6. The committee should explore how to make staff aware of the site crisis intervention plan.
7. The committee should review with all staff the site crisis intervention plan.
8. As necessary, from the needs assessment, the committee presents additional school crisis intervention in-service(s).

paredness, the policy developers were in a position to proceed with the sixth and final initiation step. This involved asking the Governing Board to adopt the administrative response to crisis policy statement (Table 1). To demonstrate support for crisis preparedness procedures, it was judged important to have district-level administrators participate with the policy developers in the board presentation.

Implementation of the Crisis Intervention Policy

Once the Governing Board adopted the policy, in November 1989, the policy developers became policy implementers. Technically, implementation had actually begun before the policy was adopted. In-service training had already been offered to all support staff and thus many were familiar with the principles of crisis intervention. Consequently, at the time of implementation, there were already individuals available at all school sites who had the basic crisis intervention knowledge required to implement the policy.

The author began implementation efforts by piloting the development of a crisis intervention team and plan at one of the schools to which he was assigned. Much was learned from this experience and from it came a document titled *Administrative Response to Crisis Situations: Recommendations for the Implementation of Board Policy 5141.5* (Brock, Lewis, & Yund, 1990). The author used it during an in-service training session designed to facilitate policy implementation. Table 3 provides a brief outline of topics covered during this in-service.

The staff development model used was considered a training for trainers. With this training, the author and his colleagues added to the cadre of individuals capable of developing and implementing school crisis intervention teams and plans.

Table 5
School Crisis Intervention In-Service Outline

IN-SERVICE INTRODUCTION
Video: *Children and Trauma: The School's Response* (Federal Emergency Management Agency, 1992).

REVIEW CRISIS REACTIONS
Discuss the common reactions of students and staff to crisis events (e.g., avoidance crisis reminders, emotional numbing, and increased arousal).

CRISIS INTERVENTION
Discuss the immediate response to crisis events (e.g., classroom management following a crisis).

SUMMARY AND NEEDS ASSESSMENT
Identify future school site in-service training needs.

Note. Adapted from Brock et al. (in press). Copyright John Wiley & Sons.

Although principals were invited to this training, participants were primarily those support staff members who had already participated in the earlier (initiation phase) staff development training. Given their relatively superior crisis intervention knowledge, this was initially judged acceptable. It was hoped that support staff would provide their principals with the expertise needed to implement the policy. Additionally, because principals were so busy running their schools it was considered impractical to require their participation. In retrospect, however, failure to include more site administrators in this training was a mistake.

Table 4 summarizes the recommendations made by the author during this training program. An important component of these recommendations specified school-site crisis intervention staff development. It is important to note that the rules for the crisis intervention policy (Table 1) specify that a review of crisis intervention guidelines be provided annually. In this way, teachers and other staff members were given the opportunity to acquire crisis intervention knowledge and skills. To help fulfill this requirement, the training for trainers included review of a school in-service model. A brief outline of this model is provided in Table 5.

Implementation problems. The most significant implementation problem was generated by conflicting perceptions about what the Crisis Intervention Policy required. Unfortunately, the Assistant Superintendent who supervised principals interpreted the policy differently than did the policy developers. In a memo to principals, designed to remind them of their crisis preparedness responsibilities, he only asked that they complete one of the eight implementation recommendations. Principals were told that they simply needed to complete the Planning Checklist (Table 4, item 5). A sample Planning Checklist is provided in Table 6.

A second related implementation problem was that schools initially had difficulty responding independently to crises. Although the policy developers always intended to be available to assist with crisis team development, it was anticipated that the schools themselves would take primary responsibility for their own crisis interventions. Despite the fact that all schools completed the Planning Checklist, there was difficulty getting some sites to use these crisis plans. In part, this may have been related to the fact that some schools did not engage in all the activities that the policy developers felt were necessary to develop crisis teams (as specified in Table 4). Another explanation for this problem was that the author and his colleagues had come to be viewed as crisis intervention "experts." Consequently, they were

often called upon to help manage a crisis before schools attempted to do so on their own.

In all likelihood, both of these implementation problems were a function of the fact that the school principals and key district-level administrators had not participated in the training for trainers in-service. It was through this training that the author and his colleagues had attempted to empower schools with the knowledge that with an adequate crisis plan, they could independently handle most crises. It was also through this training that the policy developers shared their vision of policy implementation.

Outcome. The primary purpose of the policy was to ensure that principals established school crisis intervention teams and plans. This would in turn facilitate the provision of crisis intervention services following a crisis event. Theoretically, completion of these tasks was to be documented by the Planning Checklist and, in fact, all LUSD schools did complete a Checklist. However, given the just mentioned implementation problems, completion of the Checklist itself may not have been sufficient. The author's experiences suggested that schools varied in the degree to which they were able to respond to crises. At the very least, however, the Planning Checklist did guarantee that the school principal had given some consideration to how his or her school would respond to crises. While it did not guarantee a fully functional crisis intervention team, it did ensure that consideration had been given to crisis events. In this way, the policy has improved all schools' ability to respond to crises.

Continuation

Because a Governing Board Policy statement backs up this school change, every year school principals are required to complete a new Planning Checklist. Thus, annually some consideration is given to crisis planning by all school principals. Recently, however, the author has begun to notice a problem that may be a function of the fact that it has been over a decade since the Cleveland schoolyard shooting. Possibly because of this fact, the need for crisis preparedness may not be felt as acutely as it was when the policy was first adopted. Thus, it is suspected that crisis readiness is not as high as it once was. Rather than wait for another crisis event to again heighten sensitivity to crisis preparedness, the author and his colleagues have initiated a new series of training programs. The first program was designed to increase awareness of how crisis teams are established and maintained.

Table 6
Planning Checklist

1. Designate a Crisis Response Coordinator.
2. Designate a Crisis Intervention Coordinator.
3. Designate a Media Liaison.
4. Designate a Security Liaison.
5. Designate a crisis intervention team.
6. Members of the crisis response team should work cooperatively to complete the following crisis preparedness tasks:
   - Identify crisis counseling locations.
   - Designate specific phone lines to be used for specific reasons.
   - Designate a base of operations for the crisis response team.
   - Establish a phone tree among all staff.
   - Establish a crisis response tool box.
   - Account for substitutes.
7. Review *Administrative Guidelines for Crisis Intervention* at least annually.

Note. Adapted from Brock et al. (in press). Copyright John Wiley & Sons.

Currently, a program designed to facilitate the development of crisis intervention skills is offered to educators throughout the region (Brock et al., in press).

SUMMARY AND CONCLUSIONS

The number of significant changes this District faced in a relatively short period, were quite simply overwhelming. Perhaps the single most impressive figure reflecting this change is the fact that since 1982 the District's student enrollment has more then doubled. Thus, it is not surprising that this District has come to look on almost all change with a degree of cynicism. However, what started out as an environment resistant to change, readily accepted the initiation of a crisis preparedness project following the Cleveland schoolyard shooting. This tragic event had clearly demonstrated the importance of crisis intervention readiness. Recently, however, as the Cleveland shooting has become a more distant memory, the author has questioned whether crisis intervention readiness is as high as it once was. Rather than wait for another tragedy to renew interest in crisis preparedness, the author and his colleagues have engaged in ongoing regional crisis intervention training efforts.

One of the more important lessons learned from this school change effort is the importance of involving key administrators (as well as support staff) not only in initiation efforts, but during implementation as well. Once the proposed change is brought to those with the power to implement it, there is no guarantee that they will completely share the policy developers' perceptions. In the change example described in this paper, District administration had a limited view of what crisis preparedness involved. Consequently, policy developers were not completely successful when it came to ensuring that all schools were capable of independently responding to crisis events.

Finally, there is no doubt in the author's mind that the Cleveland schoolyard shooting facilitated the adoption of this policy. This event clearly demonstrated to the school community the importance of crisis preparedness. Of equal importance, however, were the commitment, knowledge, and readiness of the crisis policy developers to strike while the iron was hot. To take advantage of a vivid example of how a situational crisis can effect a school. Thus, for the author, the single most important lesson learned from this change process was that the relevance and importance of a truly essential school change will at some point become clear to all schools and school systems. School change agents should not give up on reforms they view as essential just because the timing is wrong. Rather, they should consider postponing formal initiation efforts until the need for the proposed change is more apparent. By continuing to prepare for change, change agents place themselves in the best possible position to respond to sudden shifts in perception.

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Footnote

[1]These steps have previously been described in Brock (1994) and Brock, Sandoval, and Lewis (1996, in press).

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The School Psychologist's Primer on Anorexia Nervosa: A Review of Research Regarding Epidemiology, Etiology, Assessment, and Treatment

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The purpose of this article is to provide school psychologists with important information regarding the epidemiology, etiology, assessment, and treatment of anorexia nervosa. A review of the recent research and relevant literature is summarized reflecting the current knowledge regarding anorexia nervosa during childhood and adolescence. In addition, several web sites are included for school psychologists who use the internet as a resource. This paper emphasizes the importance of understanding the multidimensional character of anorexia nervosa. With regard to anorexia and other eating disorders, the developmental perspective explores how these conditions emerge, considering sociocultural, biogenetic, personality, family, emotional, cognitive and behavioral domains. With the increased scope and significance of this disorder, school psychologists are in a critical position to facilitate the academic achievement and healthy development of individuals who are suffering with anorexia. This paper provides school psychologists with the tools and information that are needed to be the most effective advocates and collaborators for students and families facing the challenges of anorexia.

As school psychologists striving to promote children's academic success, we study the importance of child characteristics, curriculum, instructional methods, classroom environment, and family factors among a variety of other variables. Increasingly, we have recognized the influence of socioemotional health on both classroom adjustment and achievement. However, it seems that relatively few school psychologists are adequately prepared to consider the potential implications of eating disorders on subsequent school adjustment and achievement and provide support for these students. This avoidance has been due in part to the belief that eating disorders are medical disabilities separate from educational concerns. However, eating disorders pose particular problems in the educational setting for numerous reasons. First, the age range of eating disorders now extends to early elementary school (age 7 years), with increasing prevalence in children and adolescents (Bryant-Waugh & Lask, 1995; Phelps & Bajorek, 1991). Second, the incidence of eating disorders has risen dramatically over the past two decades with no evidence of abatement (Lucas, Beard, O'Fallon, & Kurland, 1991; Steiner & Lock, 1998). The high rate among girls between the ages of 10 and 19 makes anorexia nervosa the third most common chronic illness among adolescent girls (Lucas et al., 1991). With this increased scope and significance, eating disorders can no longer be overlooked in our schools.

Of particular concern for our students is anorexia nervosa. The DSM-IV (American Psychiatric Association, 1994) includes symptoms of low body weight, fear of gaining weight, distorted body image, and the absence of menstruation in females

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in the diagnostic criteria of anorexia nervosa (see Table 1 for the specific DSM-IV criteria). This disorder has serious psychological, biological and social impacts that affect educational and socioemotional development. Under achievement, interpersonal difficulties, lack of concentration, fatigue and emotional instability are just a few of the ways in which anorexia nervosa can be detrimental to educational success (Brownell & Foreyt, 1986; Phelps & Bajorek, 1991; Steiner, & Lock, 1998; Szmukler, Dare, & Treasure, 1995). The field of developmental psychopathology has much to contribute to school psychologists working with students with eating disorders. Specifically, the symptoms, epidemiology, etiology, assessment and treatment of anorexia nervosa will be reviewed within the framework of developmental psychopathology. Quintessential information from both current and seminal articles and highlights of world wide web sites are included below.

EPIDEMIOLOGY

In general, it appears that the prevalence of anorexia nervosa may be on the rise. Currently, studies of females in late adolescence and early adulthood indicate prevalence rates of between 0.5% and 1.0% using DSM-IV criteria (American Psychiatric Association, 1994). Studies suggest that females comprise the majority of cases, but males may make up 5% to 10% of the overall anorexic population. Studies of childhood-onset anorexia (before age 14) show that boys may represent 20% to 30% of anorexia nervosa cases (Attie & Brooks-Gunn, 1995; Lask & Bryant-Waugh, 1991; Maloney & Klykylo, 1983; Ross, 1977). The age of onset for anorexia nervosa appears to be bimodally distributed at ages 14 and 18 years and is often associated with a significant life event such as the onset of puberty (Attie & Brooks-Gunn, 1995). In a recent study, over one-third of the adolescent female population reported participating in such aggressive methods of weight control and reduction as chronic dieting, excessive exercise, and diet medications (Phelps, Johnston, & Augustyniak, 1999). Some evidence shows that the majority of anorexics are women who are Caucasian and from higher socioeconomic backgrounds. These demographic trends, however, may be shifting towards including more ethnic minorities and those from lower social classes (Attie & Brooks-Gunn, 1995; Lask & Bryant-Waugh, 1991).

Recently, Lilenfeld and colleagues (1998) used family-epidemiological methods to examine patterns of comorbidity and familial aggregation of psychiatric disorders for anorexia nervosa and bulimia nervosa. Results suggest that the relatives of anorexic and bulimic subjects had increased risk of clinically subthreshold forms of an eating disorder, major depressive disorder, and obsessive-compulsive disorder. Additionally, the results suggest a shared familial transmission of anorexia nervosa.

Steiner and Lock (1998) offer a recent comprehensive review that highlights research in normal development as it pertains to anorexia nervosa and bulimia nervosa, their diagnosis, prevention, and treatment. This article points to several persistent methodological problems in the current literature: most studies involve mixed samples of adults and juveniles, and age at onset of illness and duration of illness are rarely controlled for and thus may confound treatment results. They assert that longitudinal research is needed addressing normative data on the development of eating behavior and specific risk and resilience factors for pathology in specific developmental periods.

Walter and Kendler (1995) studied the epidemiologic characteristics and risk factors of anorexia nervosa. They also examined the relationship between anorexia and anorexia-like syndromes, noting that partial-syndrome anorexia nervosa is probably more common than anorexia nervosa and that there may be a continuum of pathology on which classic anorexia nervosa represents the furthest extreme. Thus, although the prevalence of classic, narrowly defined anorexia nervosa was relatively rare (0.5%), there also seemed to be a higher percentage (1.0%) of women who exhibited anorexia-like symptoms but did not

Table 1
DSM-IV Criteria for Anorexia Nervosa

The diagnostic criteria according to the DSM-IV (American Psychiatric Association, 1994) for Anorexia Nervosa is as follows:

a) Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected).

b) Intense fear of gaining weight or becoming fat, even though underweight.

c) Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.

d) In postmenarcheal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles. (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen).

Specify types:

Restricting Type: during the current episode of Anorexia Nervosa, the person has not regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).

Binge-Eating/Purging Type: during the current episode of Anorexia Nervosa, the person has regularly engaged in binge-eating or behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).

meet full criteria for class anorexia nervosa. Additionally, over 3% of women reported an anorexic-like episode at one or more times in their lives. In this study, a significant relationship is reported between anorexia nervosa and dieting status, low self-esteem, high levels of neuroticism, and maternal overprotectiveness. The authors also reported comorbidity between anorexia nervosa and major depression, bulimia nervosa, generalized anxiety disorder, alcoholism, phobias, and panic disorder.

Lask and Bryant-Waugh (1992) provide a comprehensive review of the literature pertaining to anorexia in the 8 to 14-year-old age group. The first section of the review covering epidemiology and demography provides a thorough summary of prevalence studies and also addresses such issues as eating disorders in various ethnic groups and the usefulness of diagnostic criteria. The article goes on to present information on the possible pathogenesis of anorexia, its biological correlates, the psychometric assessment of the illness, other psychological aspects, and possible outcomes of treatment. The authors conclude that the pathogenesis of eating disorders is likely the result of a complex interaction of genetic, biological, personality, and family factors.

The study of anorexia nervosa is still in its infancy and further research needs to be done, especially with ethnic minorities and samples from lower socioeconomic classes. Researchers have noted that the relatively low prevalence rate makes this condition hard to study. In addition, diagnostic criteria have changed over the years (e.g., DSM-III and DSM-III-R) which adds to the difficulty in diagnosing and studying this condition. However, school psychologists are in a key position to refine and clarify these questions. Recent research points to the importance of assessing familial and environmental factors that could aid in the prevention and diagnosis of anorexia nervosa.

ETIOLOGY

Research regarding the etiology of anorexia nervosa looks at factors that predispose, precipitate, and perpetuate this disorder. Sociocultural explanations view anorexia as resulting from society's exaggerated emphasis on excessive thinness, especially for women (Modell & Goodman 1995; Stoylen & Laberg 1990).

Biological models look at the genetic predisposition to anorexia nervosa (e.g., twin studies; Brooks-Gunn & Reiter, 1995; Ericsson, Poston, & Foreyt, 1996; Young 1991). Psychological models have focused on the importance of family interactions (e.g., individuation-separation difficulties) and the patient's view of self (e.g., intrapsychic paranoia) as important factors (Altman & Lock, 1997). In recent years, researchers and practitioners have begun to view the etiology of anorexia as multifactorial rather than resulting from a single cause (Wren & Lask, 1993). Accordingly, etiology is being viewed in terms of the interactions between various risk factors, and there is a growing consensus that biological vulnerability, psychological predisposition, family situation and social climate all contribute to the risk of developing anorexia (Stoylen & Laberg, 1990). The articles below provide school psychologists with an overview of these etiological factors.

Sociocultural

Modell and Goodman (1990) provide an interesting historical perspective on adolescent development and eating disorders from the early nineteenth century through the 1990s. One common thread tying this developmental perspective through time is the powerful influence of society on disordered eating.

Stoylen and Laberg (1990) also provide a historical introduction to eating disorders, including anorexia nervosa, from a sociocultural perspective. The authors point out that none of the common theories of etiology are complete on their own and that the question is not about which of these factors is the cause but rather which of these factors is primary. According to this article, the current social norms that emphasize unrealistic slimness have more to do with the etiology of anorexia than any other single factor. Thus, this article approaches etiological issues from a developmental, multifactorial perspective.

Biological

Brooks-Gunn and Reiter (1990) provide a thorough review of the role of the pubertal process development and the association with eating disorders. Specific focus is given to how hormonal changes influence growth. Specifically, the authors review how levels of hormonal secretions are suppressed when women experience a considerable loss of weight. This results in lack of menstrual cycles in which fertility is impaired.

Young (1991) examines how levels of estrogen contribute to symptoms seen in anorexia. The author posits that an abnormal response to estrogen may be implicated in manifestation of anorexia and that progesterone, which blocks estrogen, may be a promising treatment for the future.

Psychological

Altman and Lock (1997) review psychological and behavioral factors associated with eating disorders. Specifically, they discuss how children's feeding difficulties at very young ages are associated with later eating problems. The authors also discuss how certain personality traits, such as being compliant, perfectionistic, goal oriented, shy, and obsessive can sometimes be associated with anorexic patients. Additionally, children who are depressed and who have been exposed to a greater number of stressful life events than is normal are also more likely to develop eating disorders. Finally, insecure attachment styles are also discussed as recognized characteristics in eating-disordered individuals

General

Keel, Fulkerson, and Leon (1997) completed an empirical study of the precursors of eating disorders, including both males and females in the sample. The researchers assessed fifth and sixth grade boys and girls in terms of depression, body image, self-esteem, eating behaviors and attitudes, weight, height, and pubertal development over two years. For girls, year one body mass index and pubertal development predicted year two disordered eating, while for boys, year two disordered eating was predicted by poor body image in year one. This is a carefully conducted study that provides a thorough background of the problem as

well as a discussion of the implications of the study.

Wren and Lask (1993) emphasize the importance of viewing eating disorders as multi-factored syndromes and of understanding how various factors interact and develop over time to produce the eating disorder. This is an excellent overview of etiology that discusses biological factors, psychodynamic models, regression models, adverse sexual experiences, family models, and cultural explanations. The authors conclude with a discussion of how these theories of etiology may be integrated.

In examining the research and literature on the etiology of anorexia nervosa, it appears that psychological, sociocultural, and biological theories all play some role in contributing to the onset of this condition and that no single factor alone can explain the development of this disorder. Accordingly, it is critical that future research and literature acknowledges and explores multifactorial explanations for the onset of anorexia. Utilizing an etiological model, it is recommended that prevention efforts be directed toward female and male young adolescents with an orientation toward increasing factors which attenuate risk status while reducing elements that place teens in jeopardy.

ASSESSMENT

Assessing anorexia nervosa remains a complex area of clinical activity because the disorder presents with a range of disturbances in multiple domains. Anorexia can be expressed in many dimensions, such as cultural, social, behavioral, familial, and physical. Therefore, it requires diagnostic attention at each of these levels. During the assessment process, individuals are usually asked to complete a series of questionnaires. Selecting appropriate instruments facilitates treatment recommendations, and creates a data base that allows for the evaluation of treatment effectiveness. School psychologists can be of particular help in assessing anorexia. Specific physiological measures, structured and semistructured interviews, and clinical and self-reports, are all utilized in this process.

Physiological Measures

Casper (1998) suggests that physical exams should include weight and height measurements, body mass index, a record of menstrual cyclicity and regularity, and an endocrine profile. However, it should be noted that there are no biological measures with proven specificity for anorexia nervosa.

Interviews

Numerous semi-structured interviews for eating disorders have been described in the research literature: Eating Disorder Examination (EDE), Interview for Diagnosis of Eating Disorders (IDED), and Clinical Eating Disorder Rating Instrument (CEDRI).

Bryant-Waugh, Cooper, Taylor, and Lask (1996) report the results of a recent study using a slightly modified EDE. The two main modifications to the EDE were: the inclusion of a sort task to assess overvalued ideas about weight and shape, and the reformulation of certain items to assess intent rather than actual behavior. Results indicate that it may be a useful assessment tool for not only adolescents and adults, but also for children (aged 7-14 years). However, only 16 subjects were utilized in this study, thus, results should be interpreted with caution.

Fichter, Herpertz, Quadflieg, and Herpertz-Dahlmann (1998) provide a review of the recently revised Structured Interview for Anorexic and Bulimic Disorders (SIAB-EX) including a discussion of the validity of the SIAB-EX. Specifically, a five-factor solution was shown to have good internal consistency and interrater reliability. Additionally, DSM-IV and ICD-10 diagnoses for eating disorders can be derived directly or by using a computer algorithm from the SIAB-EX.

Kauffman, Birmaher, Brent, and Rao (1997) present reliability and validity data regarding a general interview for psychiatric diagnosis, the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL). This measure

includes sections for the assessment of eating disorders. It has been found to have adequate reliability and validity.

Kutlesic and colleagues (1998) tested the most recent version of the IDED (IDED-IV) for the purpose of differential diagnosis of eating disorders. Evidence for internal consistency was found for symptom ratings relevant to bulimia nervosa, anorexia nervosa, and binge eating disorder. Additionally, support was found for the content, concurrent and discriminant validity of the IDED-IV. Interrater reliability for differential diagnosis of eating disorders was also high. Therefore, it can be concluded that the IDED-IV yields sufficiently valid and reliable data.

Palmer, Robertson, Cain, and Black (1996) outline the many uses of the Clinical Eating Disorders Rating Instrument (CEDRI) in assessing many of the behaviors associated with clinical eating disorders. A recent study confirmed the pattern of results that provides evidence for the validity and reliability of this instrument. Specifically, the ability of the CEDRI to discriminate between a weight concerned comparison group and a sample of subjects with clinical eating disorders could be seen as a particularly exacting test of validity.

Clinical and Self-Report Assessments

A range of clinical and self-report measures are outlined in the literature. What follows is a summary of the most highly utilized assessments.

Garner, Olmsted, Bohr, and Garfinkel (1982) describe the Eating Attitudes Test (EAT) which is commonly used as a measure of anorexic attitudes regarding eating and weight. A factor analysis conducted with the EAT identified three factors including: Dieting, Bulimia, and Food Preoccupation, and Oral Control. The EAT has been found to yield reliable and valid data.

Keel, Fulkerson, and Leon (1997) provide information on the Self-Image Questionnaire for Young Adolescents (SIQYA), which asks adolescents to rate how much they like and are comfortable with their bodies. This article suggests that the psychometric properties of this measure are strong.

Kutlesic et al. (1998) also report information about the Eating Disorders Inventory-2 (EDI-2). The authors suggest that it has been found to yield data with moderate-to-high levels of internal consistency, test-retest reliability, and convergent and discriminant validity. The entire EDI-2 has 11 subscales that measure cognitive and behavioral dimensions of both anorexia and bulimia nervosa.

Sunday, Halmi, and Einhorn (1995) describe the Yale-Brown-Cornell Eating Disorder Scale (YBC-EDS) which can be used to assess the preoccupation with rituals associated with eating disorders. This article suggests that results confirm the reliability and validity of the YBC-EDS. Additionally, the authors state that this measure characterizes and quantifies preoccupations and rituals associated with eating disorders. It is useful both for research and clinical purposes.

Williamson, Davis, Bennerr, and Goreczny (1989) provide on overview of the Body Image Assessment procedure (BIA) which may be used to examine body image disturbances. The BIA measures perceived current body size, preferred body size, and the discrepancy between these two. Evidence for test-retest reliability, and construct validity has been reported in this article.

Assessing anorexia nervosa requires a multifactored approach. One must take the many cultural, societal, behavioral, familial, and physical factors into consideration. Physiological measures, interviews and clinical and self-reports are all important in this process. Utilizing a developmental model is most useful in gaining a full picture of these various factors and how they interact. Ideally, an assessment should include a full physical exam, a general diagnostic interview, and a specific interview that goes into more detail regarding anorexic symptoms. It is crucial that this specific interview is based on the most recent changes in diagnostic criteria.

TREATMENT

Anorexic individuals rarely seek treatment voluntarily. Most enter treatment under duress from alarmed relatives, friends, or co-workers who have cajoled them into the therapist's office. The few true volunteers are typically seeking relief from food preoccupation, depression, or anxiety rather than low weight status. Often, the first job of the therapist is to help the patient overcome their resistance to change. The goals of treatment for anorexics apply to the medical, nutritional, psychological and familial aspects of their lives. Specifically, there must be adequate weight gain and return to physical health, a resumption of nutritionally balanced eating habits, resolution of distorted cognitions, body image problems, self-image and comorbid conditions, and a focus on individuation, family relationships, and parent-child conflict issues (Robin, Gilroy, & Dennis, 1998).

Considering the multiple goals, a variety of different therapies have been proposed. However, research has not determined one treatment of choice for anorexia nervosa. Additionally, no well-controlled psychopharmacological studies of patients with eating disorders have been performed (Gillberg & Rastam, 1998). Individual psychotherapy, group therapy, family therapy, cognitive behavioral therapy, and multidimensional approaches have all been acknowledged as acceptable forms of treatment. However, there is no conclusive research that specifies the efficacy rates of these various forms of therapy.

Individual Psychotherapy

Robin et al. (1998) review the treatment of eating disorders in children and adolescents. The authors state that long-term psychodynamic therapies are probably the most frequently utilized outpatient treatment for anorexia nervosa in the United States. They point to evidence that suggests an ego-oriented, self psychology approach has proven clinically useful. This approach has been subjected to rigorous evaluation in a randomly assigned, controlled comparison to Behavioral Family Systems Therapy. Additionally, individual therapy was found to be superior to family therapy on weight gain (but not psychosexual functioning or nutritional status) for those who became anorexic at age 19 or later.

Crisp (1997) provides a detailed rationale for seeing anorexia as a "flight from growth." He then offers specific and detailed suggestions for working with patients, including psychotherapy and dietary advice. Although this chapter focuses on individual therapy, it also provides some information about family and group therapies.

Eisler and colleagues (1997) conducted a 5-year follow-up study on anorexics that participated in a previous trial of family and individual therapy. Results suggest that individual supportive therapy works best for patients with late-onset anorexia nervosa as compared to early onset. Although it was possible to detect long-term benefits of individual psychotherapy, some of these improvements can be attributed to the natural outcome of the illness.

Family Therapy

A recent study by Eisler and colleagues (1997) outlines the positive results from a five-year study on the effectiveness of family therapy for anorexia nervosa. This article suggests that family therapy is most effective with a particular group of individuals with anorexia nervosa: those with early onset and short history.

Robin, Gilroy, and Dennis (1998) report that Dare and Szmukler's (1991) approach to family therapy for adolescents with anorexia nervosa emphasizes the family as a resource that has to be mobilized to help the starving youngster. The therapist refrains from expressing views about the etiology of the condition, but suggests that the family is presented with a problem of unknown origin which is not their fault, but that will require all of their resources to overcome. When this therapy was compared to a supportive individual therapy, family therapy had a more favorable outcome for the early onset (before aged 18), short duration (less than three years) type of anorexia (similar to the results found in the Eisler [1997] article). In

general, their research supports the effectiveness of family-oriented treatments. The authors suggest a number of important issues to remember: use nonblaming terms, direct parents to take charge of their child's eating routines, maintain a structured behavioral weight gain program, after weight gain give gradual control of eating back to the child, and once the patient begins to gain weight, focus treatment on broader topics such as autonomy, parent-child conflicts and family interactions.

Sargent, Liebman, and Silver (1985) do a nice job of providing the rationale for family therapy for anorexics. The authors provide specific treatment steps and addresses special problems that might arise (e.g., lack of progress, single parent families). This chapter is part of a classic text on anorexia and is an important resource even though it is somewhat dated.

Group Therapy

Garfinkel and Garner (1982) provide a thorough overview of the multidimensional aspects of anorexia nervosa. It suggests that group therapy be instituted when the starvation symptoms have begun to be reduced. Their research has found that assertive training groups are beneficial to patients because they allow them to display a more direct expression of appropriate affect in a controlled setting. They state that the purpose of these groups is to provide a setting in which patients may discuss their feelings connected with the disorder and how it has affected them, in a setting where they can be accepted and understood. Additionally, the group should provide support, models of coping, peer feedback and education. The authors also note the benefits of group therapy for parents.

Cognitive-Behavior Therapy

Robin, Gilroy, and Dennis (1998) state that in the cognitive-behavioral approach to the treatment of anorexia nervosa (Garner, 1986), the therapist should focus on using cognitive restructuring to modify distorted beliefs and attitudes about the meaning of weight, shape and appearance, which are believed to underlie dieting and fear of weight gain. The authors state that little empirical work has been done with cognitive-behavioral approaches to anorexia nervosa, and that none of this work has been done with children or adolescents. They report the results from a study that found no significant differences between cognitive-behavioral therapy, behavior therapy, or a no-treatment control group with patients presenting with anorexia. Given the perfectionistic characteristics of the majority of individuals with anorexia, the use of cognitive-behavioral treatment would appear to have promise with this population. However, issues have been raised about the minimum age and level of cognitive development necessary for implementing this type of treatment.

Schmidt (1998) outlines that even though cognitive-behavioral therapy is the gold standard treatment for bulimia nervosa, the evidence supporting its usefulness with anorexic patients is much more mixed. The authors suggest that basic cognitive-behavior therapy may need to be supplemented with other measures to achieve better outcomes for individuals with anorexia.

Johnson, Tsoh, and Varnado (1996) review the efficacy of pharmacological and psychological interventions with eating disorders. This article provides valuable information about and a comparison of two types of treatment: medication versus cognitive behavioral. For example, the authors discuss different types of medication and give an overview of the different components of cognitive behavior therapy.

Multidimensional Approach

Mantero, Giovanni, Raffaele, and Gaetano (1998) outline the importance of utilizing an integrated treatment of anorexia. This effective treatment entails some guidelines for cooperation among specialists involved in the management of such patients. The authors outline the importance of utilizing a problem-solving approach in this type of treatment.

Shekter-Wolfson, Woodside, and Lackstrom (1997) provide a brief and comprehensive over-

view of both anorexia and bulimia. It discusses issues related to etiology, assessment, and treatment options. The authors advocate a multidisciplinary, multidimensional approach to treating anorexia, including psychoeducation, medication, cognitive-behavior therapy, individual, and family therapy. This is a good resource in providing practitioners with different treatment options but does not provide enough detailed information with regard to specific treatment plans.

Golder and Birmingham (1994) focus not on a specific type of treatment but instead, on a set of primary treatment components (e.g., medical stabilization, establishment of therapeutic alliance, weight restoration). The authors allude to different types of treatment, such as cognitive behavioral, family, and psychodynamic therapies. Rather than endorsing one type of treatment, this chapter acknowledges the validity of multiple types of therapies and emphasizes the need to focus on key components of treatment. This is a helpful piece for both practitioners and researchers to think about the key issues related to treatment of anorexics.

Anorexia nervosa can be seen as a process. There are continuous interactions between the individual and his/her external world, the symptoms and his/her attempts to deal with the symptoms, which result in an elaboration of the disorder in a variety of forms for each person. Because the development of anorexia nervosa is influenced by these different factors for each individual, a multidimensional approach is recommended as the treatment of choice. This type of therapy allows the practitioners to tailor the treatment to the individual patient. In addition, the multidimensional approach recognizes that treatment must address biological, familial, sociocultural, and psychological components of the individual's recovery. Individuals with anorexia nervosa may come to treatment at various stages in the course of their disorder. Some may require immediate medical attention and forced feeding while others may be in a condition to benefit more from insight-oriented therapy. Thus, depending on the individual (including age) and the stage of their disorder, the multidimensional treatment allows for a focus on whichever aspects are most salient at that time.

Optimal treatment within this multidimensional framework should include a clinical team of different professionals including school psychologists. This allows the patient to receive specific interventions from individuals with the most training and knowledge of the issues at hand. It is in this type of environment where the patient and his/her family can be fully understood.

Because anorexia nervosa, especially in its childhood-onset form, is known to be an extremely difficult disorder to treat, many different kinds of therapies should be considered. There are no controlled studies of any interventions for anorexia nervosa in children, so treatment recommendations must be based on uncontrolled studies, clinical case reports, and extrapolation downward from controlled studies with adolescents and adults. A multidimensional approach offers the most flexibility and options for the practitioner or team of health care providers. Most importantly, it provides the most specific and personalized type of treatment to individuals and families suffering from anorexia nervosa.

DEVELOPMENTAL PERSPECTIVE

The developmental perspective provides a conceptual framework for understanding disordered behavior in relation to the course of normal development. This framework also considers multiple factors that contribute to adaptive success as well as the origins and developmental course of disordered behavior (Smolak, Levine, & Striefel-Moore, 1996; Wicks-Nelson & Israel, 1997). With regard to anorexia nervosa and other eating disorders, the developmental perspective considers how these conditions arise out of sociocultural, biogenetic, personality, family, and behavioral domains. This paradigm also looks at the interaction between these different factors (Attie & Brooks-Gunn, 1995).

Researchers have not reached a consensus about which single factor is most responsible for

eating disorders. Thus, in recent years, professionals in the field have increasingly looked to a developmental perspective for understanding the etiology of anorexia nervosa. In addition, developmental psychopathology provides a means for conceptualizing how pathways of risk may lead to anorexia as opposed to other pathology or how pathways of resilience may prevent the onset of this illness.

Experts are now beginning to explore the incorporation of developmental ideas into their treatment plans (e.g., multidimensional and family therapies). To better understand these ideas, treatments should be tailored to developmental stage - something that has been done infrequently to date. However, educators have a wealth of knowledge to lend to this perspective. By becoming more familiar with the issues surrounding anorexia nervosa, school psychologists can provide integral developmental information to other professionals.

SUMMARY

The experience of anorexia nervosa has many deleterious, morbid, and even mortal consequences. More than three decades of research on anorexia has clearly underscored its public health importance. However, the most basic questions in the field, those concerned with the problem's prevalence and incident, have not yet been unequivocally answered. With the increased significance and scope of this disorder, school psychologists are in a pivotal position to better understand and assist youth who are suffering with anorexia nervosa.

It is necessary to account for the normal development of many factors in multiple domains and their interaction within this developmental model. Considering the cumulative nature of development and acknowledging that early events impact subsequent adjustment, it is essential that efforts target early identification and treatment for children and adolescents. The school environment is a critical, but often overlooked, domain to consider.

Thus, researchers and practitioners should approach anorexia nervosa and its treatment from a developmental and multidimensional perspective. Further research should include the critical perspective of the school psychologist, and investigate the efficacy of such integrated approaches as opposed to traditional treatments.

WORLD WIDE WEB SITES

Anorexia—Information and Guidance for Patients, Family, and Friends
http://users.neca.com/cwildes/index.htm

This site provides information about on-line support groups, links to other resources, information for a variety of individuals who can be affected by anorexia, and the personal story of one woman's fight with this disease (including pictures). Specifically, it includes newsgroups, mailing lists, and chat rooms. Resources are also provided for individuals in recovery, parents, friends and family members dealing with anorexia.

Eating Disorders Shared Awareness
http://www.mirror-mirror.org/eatdis.htm

This comprehensive and well-organized page links two web sites through a group called Eating Disorders Shared Awareness. The same information can be found whether you go to the Mirror-Mirror site based from Canada or the Something Fishy site based from New York. Topics covered range from "Finding a Therapist" to "Surviving Holidays" to a "Survivor's Wall" with personal messages from those recovered or recovering. Clinicians also might benefit from readings on eating disorders in different populations such as athletes and older women.

Males and Eating Disorders
http://www.primenet.com/~danslos/males/home.html

This web site is unique in its focus on this particular population. Although other pages may refer to anorexic or bulimic males, this one stands out in that it is devoted to the difficulties specific to eating disordered men and boys. Those who are looking for published information on this topic might find the "Stories" and "Other Resources" section helpful in that they provide personal accounts and listings of books, articles, and television shows that deal with men and eating disorders.

American Dietetic Association
http://www.eatright.org/aanorexiainter.html/

This web site contains this organization's position statement on the treatment of anorexia nervosa, bulimia nervosa, and binge eating. It explains in great detail the structure and theory of Medical Nutrition Therapy as it can be integrated into the multimodal treatment of eating disordered patients. The site will be of particular interest to anyone who wants to know more about how to implement multidisciplinary team treatment and how dietitians and therapists can collaborate in helping this population. Finally, the site addresses issues of inpatient versus outpatient treatment and the organization's thoughts on the recent debate over the diagnosis of Binge Eating Disorder. This site is highly recommended for anyone who is curious about or wants more information regarding integrated treatment of eating disorders.

American Anorexia Bulimia Association
http://www.aabainc.org

The American Anorexia Bulimia Association (AABA) is a national, nonprofit organization dedicated to the prevention and treatment of eating disorders. Through advocacy, research, and education, AABA serves as a national authority on eating disorders and related concerns. Their mission is carried out through many different services: help-lines, referral networks, public information, school outreach, media support, professional training, support groups, and prevention programs. This site is most useful because it promotes social attitudes that enhance healthy body image and works to overcome the idealization of thinness that contributes to disordered attitudes and behaviors. It also includes a list of "professional members of AABA" who are qualified to treat clients with eating disorders.

Residential Treatment Center for Women with Eating Disorders
http://www.concernedcounseling.com/

This site is most useful for its personal appeal. It includes stories of the struggles and pictures of people dealing with anorexia, bulimia, and compulsive overeating. It also contains an on-line test for eating disorders (EAT-26), an email pal sign-up, and chat rooms with titles such as, "Parental Alienation: Are you doing or saying things that can harm your child's relationship with the other parent?" Additionally, it provides resources for those who score above the clinical range (> 20) on the EAT-26.

National Eating Disorders Organization (NEDO)
http://www.laureate.com/nedo/nedointro.asp

This site contains a range of information on anorexia nervosa, bulimia nervosa, binge eating disorder, the role of food in an eating disorder, information for families, information for schools, steps toward recovery, and treatment options. Unique to this site is the information for schools on anorexia. Because this disorder is manifested internally, and therefore less visible, it is critical that schools have the proper resources to help in assessment and treatment. Specific information on anorexia nervosa includes: major characteristics, important facts, warning signs, medical consequences, treatment options, and a personal story.

Nidus Information System
http://noah.cuny.edu/wellconn/eatdisorders.html

This page is extremely comprehensive in the background information it provides. It briefly describes both anorexia nervosa and bulimia nervosa, gives prevalence rates and epidemiological information, discusses possible etiologies, and gives diagnostic criteria. The site is especially impressive in the amount of information it contains on complications that result from eating disorders, an area that is important to be aware of but is often overlooked. It also has a very thorough description of different types of treatments for eating disorders, including pharmacotherapy. The web page concludes with a list of organizations and their addresses (and web addresses) where one might find more information about eating disorders.

Internet Mental Health
http://www.mentalhealth.com/dls/p20-et01.html

Part of the larger Internet Mental Health web page, this specific site dedicated to anorexia nervosa contains useful links to a variety of valuable topics. In describing anorexia, it provides information on both the American definition and the European definition. This may be very helpful to psychologists who are reading studies on anorexia that define the illness differently according to where the research was conducted. Another beneficial aspect of this page is that it contains links to very comprehensive listings of abstracts from research that falls into three areas: diagnosis and complications of anorexia, treatment of anorexia, and causes of anorexia. For the less research-oriented, it also contains links to booklets, brochures and magazine articles on eating disorders that have more general information.

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